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California's Computer Magazine

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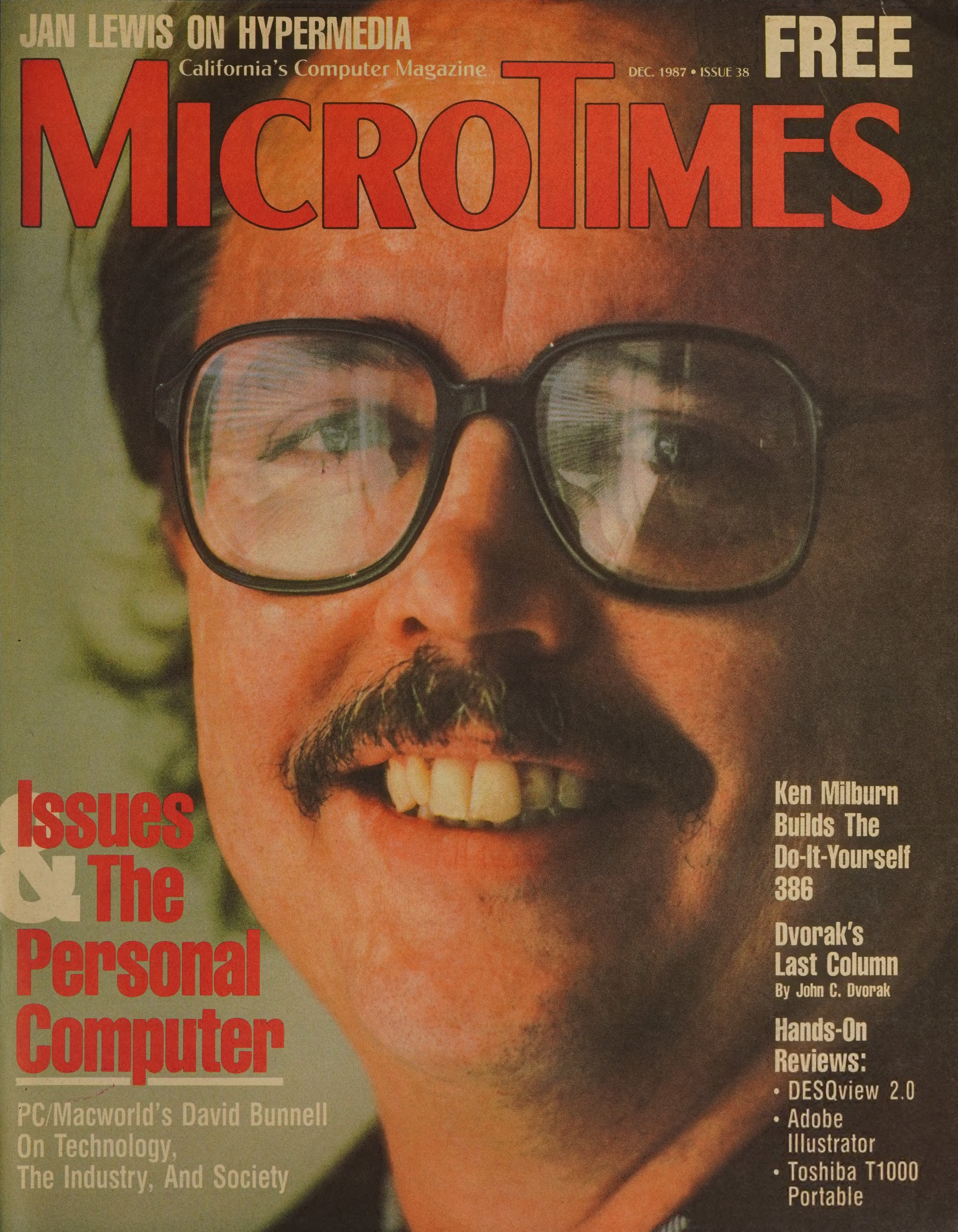
MICROTIMES



Issues & The Personal Computer

PC/Macworld's David Bunnell On Technology, The Industry, And Society

Ken Milburn Builds The Do-It-Yourself 386

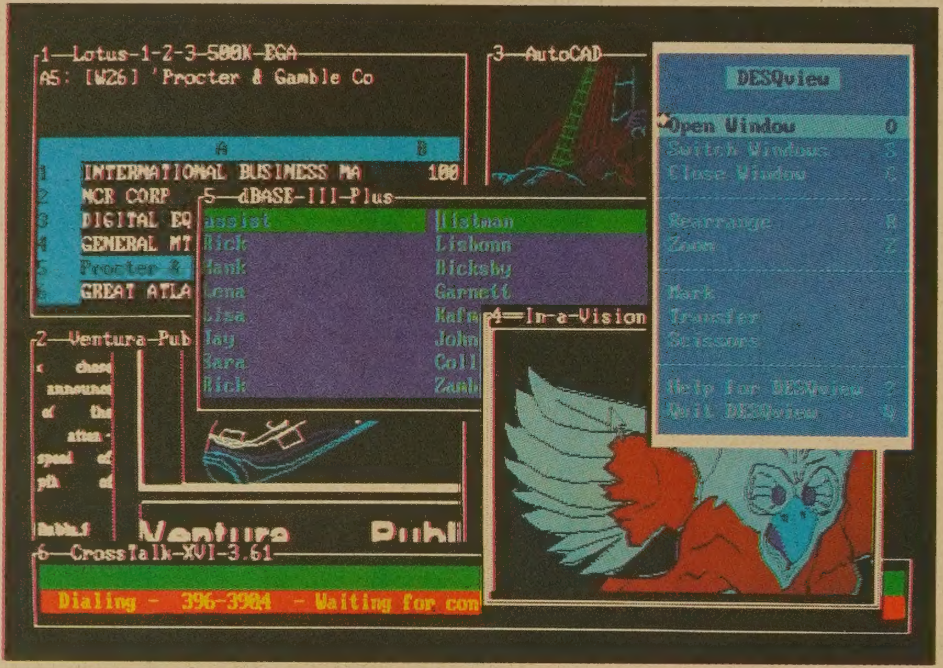
Dvorak's Last Column

By John C. Dvorak

Hands-On Reviews:

- DESQview 2.0
- Adobe Illustrator
- Toshiba T1000 Portable

How to tell the difference between DESQview™ 2.0 and any other environment.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DESQview
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Switch Windows S
Close Window C
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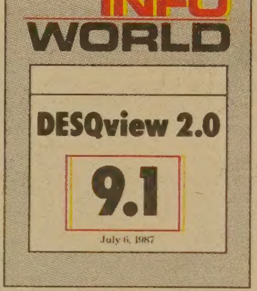
INFO WORLD
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9.1
July 6, 1987

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For the publisher of this magazine, Dennis, and his staff. For all the people who read MicroTimes. For every company in the Bay Area: We have just seen the start of the NEW ERA. Like the telephone, everybody needs a computer and a reliable computer place—plus thousands of computer part manufacturers.

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Personal Computers And The Big Picture: PCW's David Bunnell

By Mary Eisenhart

Successful publisher of some of the industry's most well-regarded magazines (e.g. *PC World*, *Macworld*) and shrewd observer of developing trends, David Bunnell also raises an outspoken — and often controversial — voice on issues that concern him. In this interview, he discusses the convictions that drive his work, what's ahead for the industry, and the impact of the personal computer on society.

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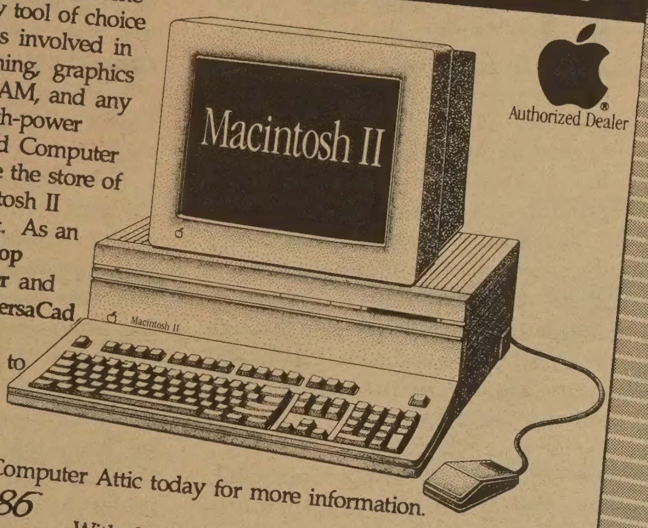

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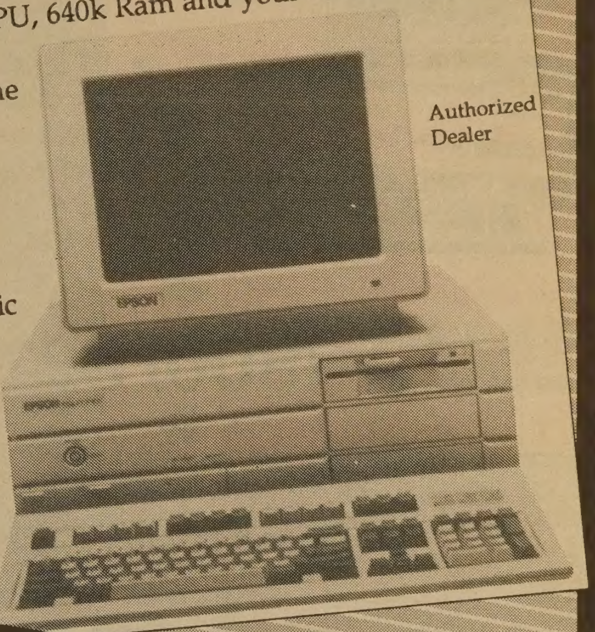

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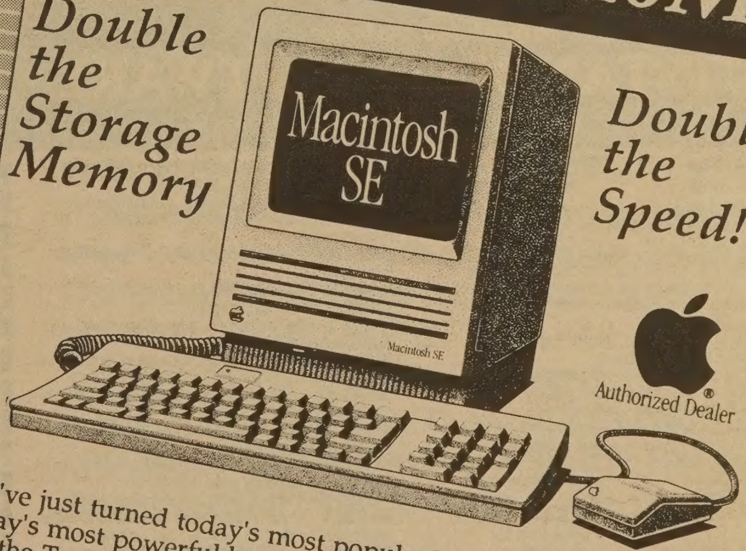

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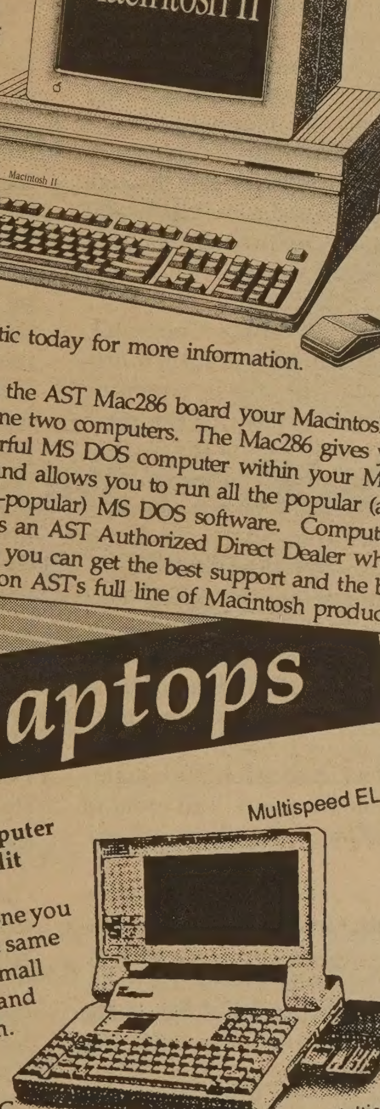

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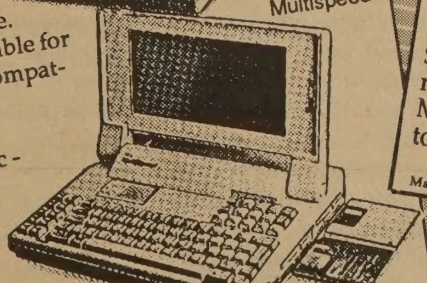

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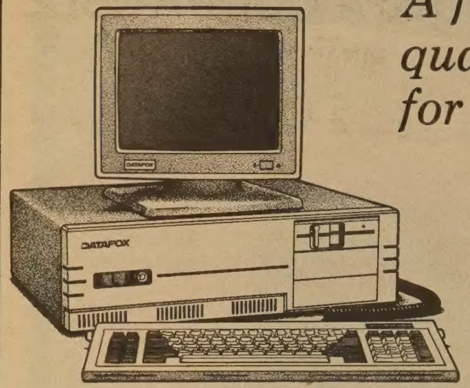

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BUT JAN LEWIS SAYS . . .

Still Linear After All These Years, Or, HyperMedia Explained

Optical storage such as CD-ROM holds the promise of delivering massive amounts of information to consumers. The main problem up until now has been how to give the user the tools to process the information — the tools to navigate through the information space.

That's the biggest challenge. And the more vast the information space is, the more important it is to have a simple structure to navigate through it — a structure that provides instant access to databases in such a way that anyone can use them with ease and excitement.

I believe that Apple Computer, with the introduction of *HyperCard*, has taken the first step to providing those navigation tools to the mass market. HyperMedia for the masses. "Navigating through an information space" for the rest of us, so to speak.

So I'd like to spend the rest of this column explaining HyperMedia.

One of the things that I find most difficult in explaining HyperMedia, is that I'm constrained to explaining it in a linear format. This column, as I present it to you, the reader, is an unfolding of my thoughts in a linear fashion. The succession of thoughts is determined a priori. The order of the unfolding of my ideas is fixed. By me.

In the process, I'm constantly eliminating ideas — constantly controlling the urge to go off on a tangent. For every sentence I write, for every idea that I put into print, there have probably been 10 or 20 ideas that I've thrown away.

Furthermore, I'm the one who determines which tangents I write about and which ones I eliminate. You, the reader, have no say in it.

But HyperMedia will change all that. In fact, HyperMedia will change virtually all the ground rules of publishing information and consuming information. It will change them in three important ways.

First, for the "author" of the information, it will mean the removal of the linear constraint of traditional media. But it will also mean developing totally different ways of thinking, organizing, and presenting information. Instead of thinking of ways to eliminate or pare branches, authors will need to think of effective ways to explore and present those branches.

Second, software tools must be available for expansion and tracking of the branching possibilities. In fact, the more complex the information space, the stronger the need for a simple and familiar structure to navigate through it. *HyperCard* is an elegant start.

Third, and the most significant, is the *user involvement in the creation of the content*. The consumer of the information will no longer passively consume the "storyline" the author has selected, but will become an active agent in configuring the storyline. In the ideal HyperWorld, exploration of information by dimensions of time, topic, level of expertise, geography, etc. would be totally under the control of the user.

If 100,000 people read this column, they'll all read the same column. Yet if I were to have individual conversations with each of the readers, each conversation would be different.

Obviously, that can't happen, but the promise of HyperMedia is that I could create a database with so many branches that every individual could in fact end up with a different "storyline" that I would be telling them.

One person might want to ask why I refer to an "information space" instead of a database. One person might want to examine "the ground rules of publishing" that I assert will be changed. Someone else might want to explore how my views evolved, or who were my biggest influences. Someone else may hear the phrase "new ways of exploring and presenting branches" and want to find out what those might be.

Using the *HyperCard* metaphor, I'd love to give you buttons to click on right now to let you explore branches that never made it to this column: interactive storyboarding, the "Prosumer," resolution/navigational trade-offs, multi-media presentation considerations, terminology, authoring and artists tools, birth of a snowflake industry, design techniques for interactivity, and more.

But we're not there yet, folks, so hold onto your horses. We'll explore each of these topics in subsequent columns. ☐

Copyright 1987 by Jan Lewis. Jan Lewis is a leading analyst and commentator on the microcomputer industry, known for her keen insights and understanding of the industry's trajectory. As president of Lewis Research Corporation, Sunnyvale, CA, Ms. Lewis serves as marketing consultant to a variety of high tech companies.

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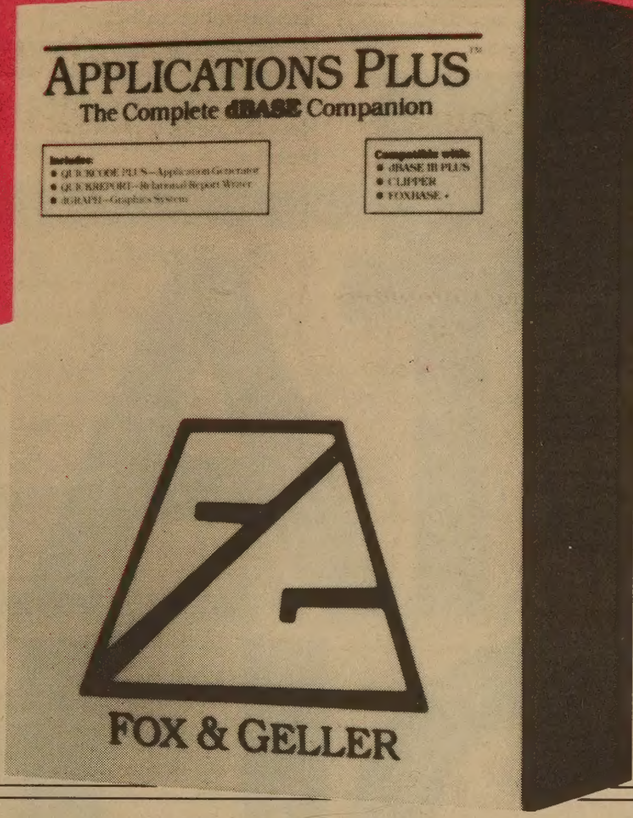

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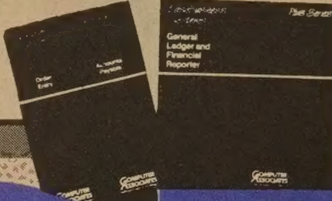

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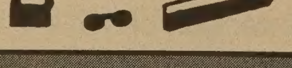

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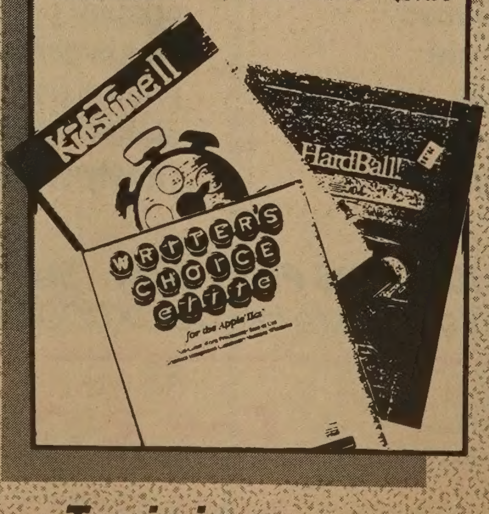

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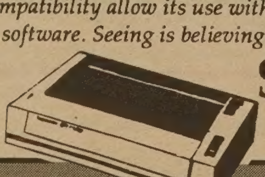

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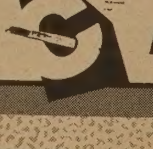

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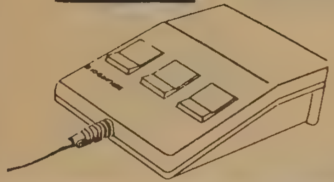

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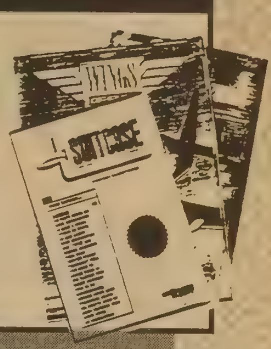

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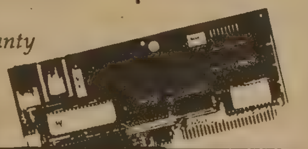

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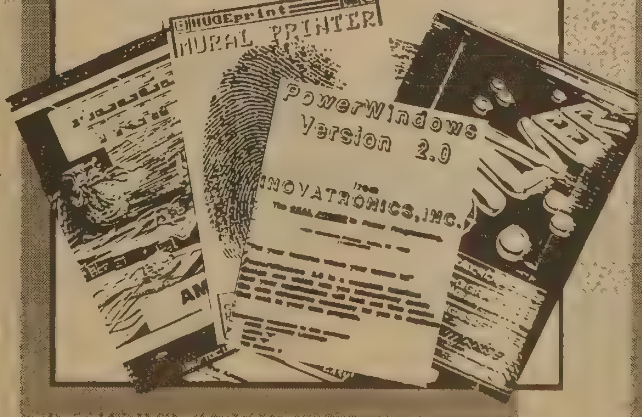

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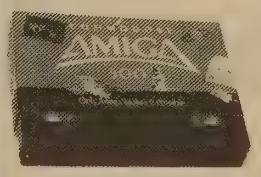

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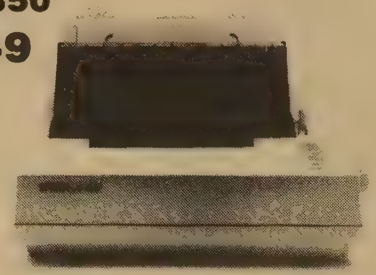
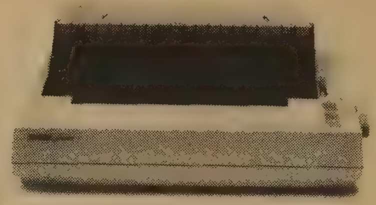


Epson's remarkably quiet LQ-850 and LQ-1050 are fast, 24-pin dot-matrix, letter quality printers ideal for small business and corporate environments. Both print at 264 characters per second (CPS) in the high-speed draft mode and 88 CPS in letter quality mode, at a quiet 55 dB or less noise level. The standard, 80-column LQ-850 and wide carriage, 136-column LQ-1050 bidirectionally print high-resolution quality in both text and graphics. For versatility and ease of operation, the LQ-850 and LQ-1050 are built with SmartPark™, the paper handling feature which allows changing paper without changing hardware; and SelecType, an illuminated LED, front control panel for selection of resident and optional fonts, pitches and print modes at the touch of a button. There's also a standard 6K internal buffer. And both come with Epson's one year limited warranty.

LQ-1050
$748



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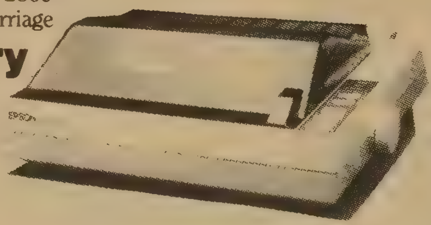
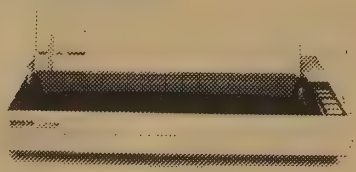
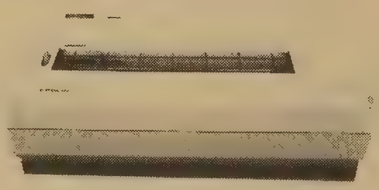


Printing 240 characters per second printhead speed in the high speed draft mode, the superb 9-pin FX-86e and FX-286e will turn out a typical length business letter in approximately 20 seconds. To provide your business printing with a more polished, professional appearance, switch to the Near Letter Quality mode. At 48 characters per second printhead speed, your reports, correspondence, proposals and other important documents will look like they came from an office typewriter.

FX-286e
BEST PRICE



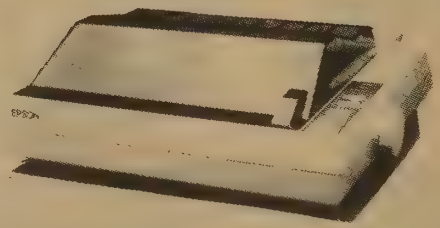
LQ-800
$395



At 180 characters per second printhead speed in draft mode, each is capable of printing a typical length business letter in under 25 seconds. When your needs require the professional look of crisp, clearly formed characters, switch to the 60 characters per second Letter Quality mode using Epson's unique front panel single-stroke changeover feature.

The advanced new 24-pin printhead creates elegant documents superior to those produced by other dot-matrix printers. Your correspondence, reports, and proposals will look like they came from a top-of-the-line office typewriter with superb, finely defined resolution. And the LQ-series printers are capable of outstanding graphics, so you can add a new dimension to your proposals and presentations.

LX-800
$199 (limited quantity)



EX-800
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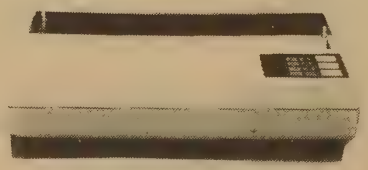

Fast, efficient and superbly versatile, the EX-800 and EX-1000 dot matrix printers are two of the best choices you'll find where volume printing and ease of use are a must. From the corporate level workstation to the small business desktop, these high speed, high productivity printers will master any size job with ease and efficiency.

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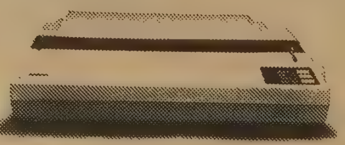
BEST PRICE



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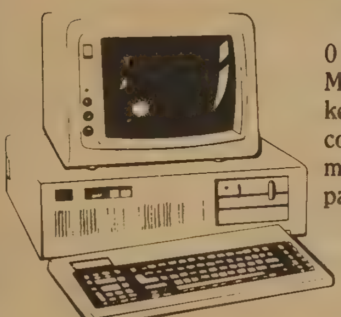

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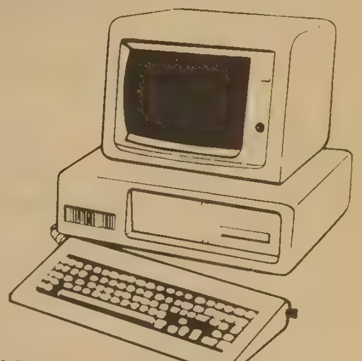

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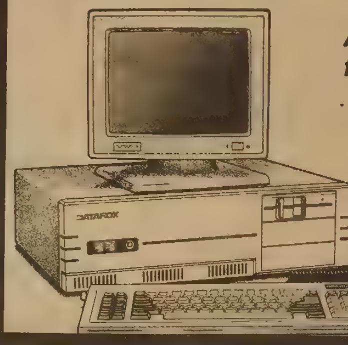

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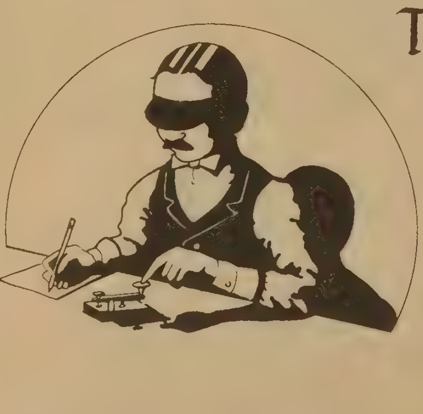

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November 12 Gavilan User Group Third Anniversary. Featuring Manny Fernandez And Jan Lewis. 7:00 pm. Lockheed Bldg., 160, Third and Matilda, Sunnyvale. Call (408) 379-2774 for more information.

November 18 Lecture. Ted Nelson, developer of the "Hypercard" concept and author of *Computer Lib.* Computer Literacy. Techmart, 5201 Great America Parkway, Santa Clara, 7 p.m. For information call (408) 562-5799.

November 14-15 DataFlex Advanced Topics Seminar. San Francisco. Contact Cochlin Computer Systems at (415) 495-5999.

November 17 Beginner DOS Class. Santa Clara. National Computer Club, 3080 Olcott Dr., Suite 125 A, Santa Clara, CA 95054.

November 19-21 MacFair. New York City. Call American Expositions Inc., (212) 226-4141.

November 19-22 imPACT '87 International Conference And Exposition On Electronic Publishing. Hong Kong. Contact Seybold Seminars at (213) 457-5850.

November 21 How To Develop And Program HyperCard Seminar Featuring Danny Goodman. Santa Clara Tech Mart, Santa Clara. Sponsored by The Software Entrepreneur's Forum. Conatct Barbara Cass at (415) 854-7129.

November 21 Amiga Class: Music, DMCS. Contact Patrick Bailey at (415) 949-4864.

November 21 Computer Mart. De Anza College Campus Center, Cupertino. Contact the Students Activity Center (408) 996-4350.

November 28-29 Computer Supermarket Show And Sale. Brooks Hall, San Francisco. Microshows (800) 433-7469.

December 1-2 DataFlex Class. Mountain View. Contact Goldcoast Software Systems. (415) 964-1500.

December 5 Computer Supermarket Show And Sale. Cow Palace, San Francisco. Microshows (800) 433-7469.

December 5 Build An AT/XT Clone Seminar With Edwin Rutsch. Whole Earth Computer Access Computer Training, Berkeley. Contact Sharon Williams at (415) 843-1700.

December 8 Beginner DOS Class. Santa Clara. National Computer Club, 3080 Olcott Dr., Suite 125 A, Santa Clara, CA 95054.

December 9 Special South Bay Meeting Of AT&T Bay Area User Group. AT&T Building 1090 East Duane Ave., Sunnyvale. Contact Mark Dill at (408) 995-3966 or Bob Larsen at (408) 226-0116.

December 12 Computer Swap Meet. Santa Clara County Fairground, San Jose. RK Productions. (800) 252-7927.

December 12 Amiga Class: Overviews. Contact Patrick Bailey at (415) 949-4864.

December 12-13 Computer Supermarket Show And Sale. Santa Clara Convention Center, Santa Clara. Microshows (800) 433-7469.

December 13 Mac Festival '88. Dunfrey Hotel, 1770 South Amphlett, San Mateo, CA. Contact Mac Business Association, 425 Anchor Road, Suite 205, San Mateo, CA 94404 or call M.A.C. at (415) 644-0516.

December 14 Visualizing Troff Internals Tutorial. One day clinic or three day seminar. Contact Uni-Ops, 260 Marshall Drive, Walnut Creek, CA 94598-2833. (415) 945-0448.

December 15 Beginner DOS Class. Santa Clara. National Computer Club, 3080 Olcott Dr., Suite 125 A, Santa Clara, CA 95054.

December 16 Unix System Security Tutorial. One day clinic or three day seminar. Contact Uni-Ops, 260 Marshall Drive, Walnut Creek, CA 94598-2833. (415) 945-0448.

January 9 Computer Mart. De Anza College Campus Center, Cupertino. Contact the Students Activity Center (408) 996-4350.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the December issue, on the street in November, is October 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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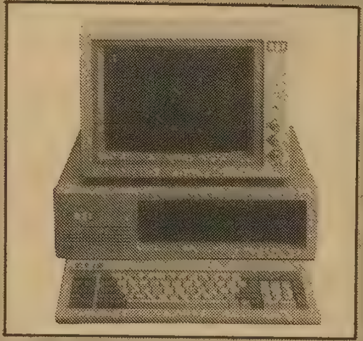

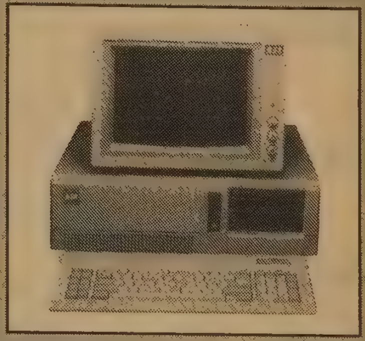

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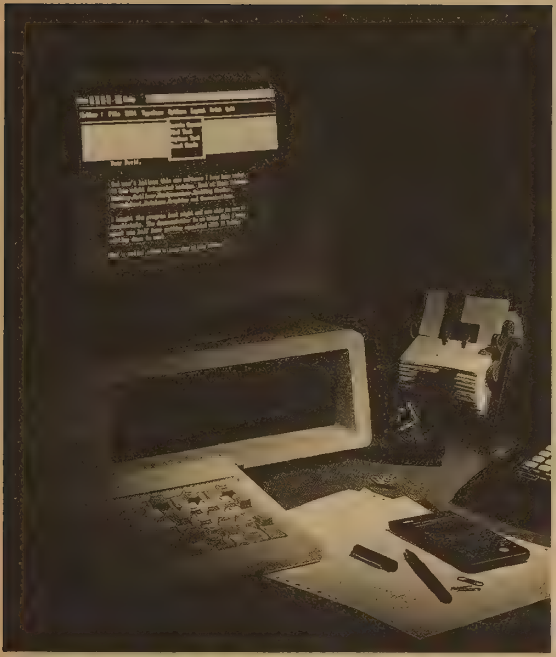

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HARDWARE

A+ Mouse

An Optical Mouse For Apple Computers

Manufactured by: *Mouse Systems*
List Price: *$119*
Reviewed by: *Mike Markowitz*

Until recently, the only sort of mouse you could get for your Apple II series computer was an Apple mouse, identical, in fact, to the Macintosh mouse (except you also need an adapter card to make it work with a IIe.) While the Apple mouse is an admirable rodent, many users find that the little rubber ball needs frequent, delicate cleaning, and it tends (with age) to skip.

There is more than one way to catch a mouse. The A+ Mouse, from Mouse Systems, is an optical device, with no moving parts. The good news is that there is nothing to stick, skip or wear out. The bad news is that it costs more, and you need a special optical grid pad, rather than any convenient surface.

The principle of the optical mouse is quite simple. Inside the box there are two light sources (LEDs) and two light detectors. One pair works in the visible spectrum, and the other works in the infrared, so they don't interfere with one another. The grid pad has fine black lines running in one direction (x-coordinates), and fine blue lines running in the other direction (y-coordinates). As the mouse glides across the grid pad on its felt paws, the detectors see alternating bright and dark bands, which the circuitry inside the mouse translates into x and y displacements.

The A+ Mouse measures 2½" wide by 3¾" long, and stands an inch high. This is somewhat wider and flatter than the original Apple mouse. The cable is about 41 inches long, which is sufficient to accommodate either right- or left-handed users. The DB9 connector has gold-plated pins and a full metal jacket. It is secured to the computer with two captive slotted screws, which are somewhat less convenient than the thumbscrews on the Apple mouse, particularly if you often swap a joystick or other device into the same port. The switch on the A+ mouse button is greatly superior, having a much lighter action and a quieter click. The beige-and-putty color scheme is very close to Apple's traditional colors.

As an active electronic device, the A+ Mouse is subject to electronic interference. If the wall socket you're using isn't properly grounded the cursor may "float" or move erratically. The mouse itself has an FCC Class B rating, and the internal circuit card is shielded with foil to minimize stray radio frequency noise.

The A+ Mouse can be used with an Apple IIc, Macintosh Plus, Mac XL or Lisa computer. It also worked on the Laser 128 we tested. With Apple's adapter card it can be used with a IIe or II+. Mouse Systems offers an outstanding limited warranty: "Your mouse and any associated hardware . . . are free from defects in material and workmanship and will remain so for as long as you own them." After the first year, repair or replacement of a defective unit carries a $10 service charge.

We tested the A+ Mouse with a variety of software including Mouse Desk, Dazzle Draw, and AppleWorks (modified with a mouse driver). Although the "feel" of the mouse was different, everything worked.

With Apple IIGS and the Mac SE and Mac II, Apple has redesigned the mouse with a new

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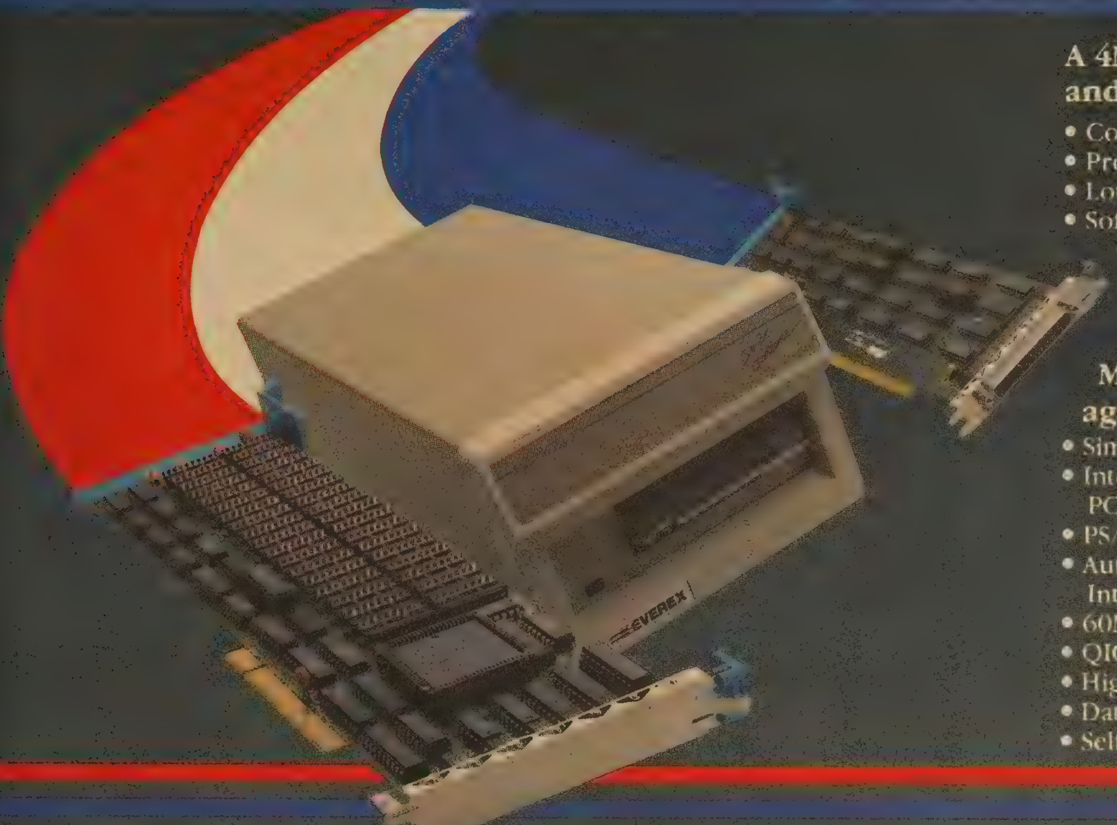

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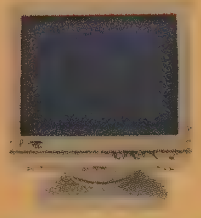

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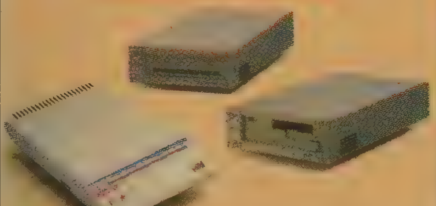

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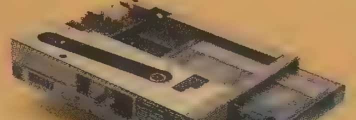

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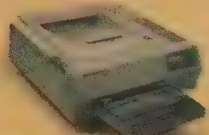

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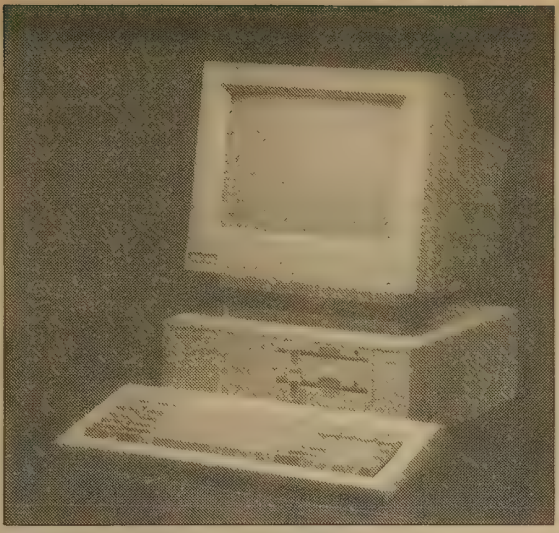
humped shape, a flatter button, a new color ("platinum") and a new four-pin "desktop bus" connector. A friendly and well-informed tech support person at Mouse Systems told me that the company expects to have an optical mouse that is plug-compatible with the new design by the Fall of 1987. (MSC Technologies, 2600 San Tomas Expwy., Santa Clara, CA 95051. (408) 988-0211.)

The Blue Chip Personal Computer XT

From: *Blue Chip Electronics*
Price: *$599.99. Monitor extra.*
Reviewed by: *Robert D. Athey Jr.*


The Blue Chip Personal Computer XT offers low cost and good performance.

The Blue Chip Personal Computer XT was introduced a few months ago as an import from Hyundai of Korea. The prime selling points were low cost and IBM compatibility. The base computer is a 512K RAM single disk drive device for $599.99. The green monochrome monitor is available for $99.99 and the amber monochrome monitor sells for $129.99.

The computer has an 8088 chip which runs at 4.77 MHz. A socket is available for an 8087 math co-processor chip. The machine's operating system is MS-DOS 3.2 which is included for $99.99.

Other options (paid for separately!) include: a color monitor for $349.99, a high resolution CGA board for $139.99, a 360K floppy disk drive for $139.99 and a multifunction and memory expansion board (128K) with serial and game ports for $149.99.

Big Blue can't match these prices by any means, but they aren't uniquely low for clones either. What makes these computers unique is their marketing strategy—in addition to various computer dealers, they are being sold through such mass-market channels as Target, Fedco, Savemart and Federated Group. They are also being test marketed by Walmart and Toys 'R Us! The marketing organization behind this strategy is Yogo-Yogo, which appears to be aiming for the home as well as the small business market.

We found setting up the Blue Chip easy, as the documentation provided clear illustrations of the necessary steps. It was also well written and unusually lucid for the moderately experienced user. The documentation came in two large loose-leaf booklets. One of them had pockets that contained the three disks with the operating system and GWBASIC.

We encountered no major compatibility problems running standard programs on this machine, except with certain games that apparently don't like MS-DOS 3.2. Public domain programs *MBRAIN12*, *CWEEP214* and *SIMCGA* were useful and ran well.

The main task we tried on this computer was word processing with a spelling checker. The RAM was converted to a 360K RAM disk with *MBRAIN12*. *Perfect Writer/Perfect Speller* was then loaded into the C: RAM disk section. The spelling checker worked without any difficulty and the document could be modified as needed. When you only have one disk drive, this method of "creating" another "disk drive" in your RAM allows you to run your applications much faster than when you have to use disk swapping routines.

We also tried several games, including the bridge games *CYBRON* from Electronic Arts and *BridgePro* from Computer Management Corp. The action graphics games from the public domain that did not require CGA were *CENT* and *The WW I Biplane*. Adventure games such as *Rogue* and *Hack* were also played.

For games that did require CGA, the program *SIMCGA.COM* allowed them to run on the Blue Chip. The graphics were clear, and highlighted where necessary. The Washington PC Users's game *Dragons* was a bit fuzzy. This, however, this may be the fault of the program.

The computer had a workout of about four to six hours a day for several weeks and showed no sign of problems. An unusual squeal came from the fan for the first few minutes it operated, but the noise went away as it warmed up and has not reappeared. The fan was certainly efficient, as the room felt several degrees cooler than the rest of the house when it was on.

All in all, if you need a low cost MS-DOS device, the Blue Chip may be for you. As Hyundai is providing financial backing for Blue Chip, as part owner through a minority share purchase, you can certainly expect them to be around awhile to support the machine. Since the machine is

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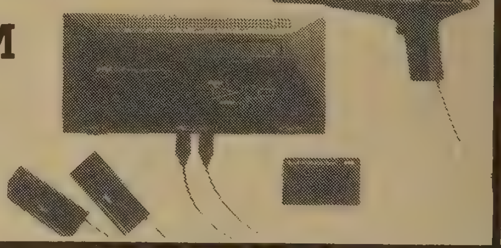

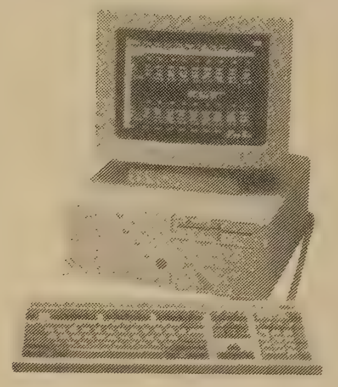

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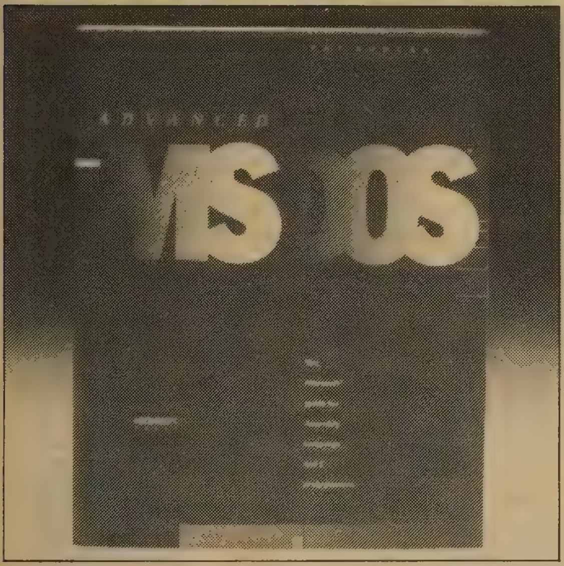
being marketed through a variety of channels, check into the service and support policies of the establishment where you're thinking of buying—your local computer dealer will probably offer greater support than some of the massive discount chains, and that's a major consideration for most users.

Blue Chip's Technical Support number is (800) 832-2272. (Blue Chip Electronics, 7305 W. Boston Ave., Chandler, AZ 85226. (602) 961-1485. Yogo-Yogo can be contacted at (617) 566-4733.)

BOOKS



Advanced MS-DOS is an indispensable tool for the serious programmer in the DOS world.

Advanced MS-DOS:

The Microsoft Guide for Assembly Language and C Programmers.

Written by: *Ray Duncan*
Published by: *Microsoft Press (1986) 496 pages*
List Price: *$22.95 softcover*
Reviewed by: *Wayne A. Yacco*

Advanced MS DOS is not a book for the fainthearted. If you aren't prepared to open the guts of your operating system and stick your hands in, then this book may not serve any practical purpose for you. If you lack the curiosity to, at least, look into the bowels of DOS, then it is unlikely to provide you with any benefit whatsoever. On the other hand, if you have always wanted an illustrated guide into the maze of arcana that surrounds your microprocessor, here is your electronic *Gray's Anatomy.*

Duncan's work is logically divisible into two parts. The first part, Section I, contains the details necessary to program in the DOS environment. The second half includes Sections II, III, and IV and provides detailed references to the functions of the operating system.

The thirteen chapters in Section I provide the user with the information necessary to integrate programs with the operating system. The structure and organization of DOS are examined and memory is mapped. Vital protocols such as the program segment prefix are detailed. Techniques are provided for interfacing with the various resources of the DOS environment: monitors, keyboards, printers, and mass-storage devices.

The volume is laced throughout with tips and techniques for accomplishing virtually every basic programming task through the services provided by the operating system. Also set forth are the rules for creating well-behaved applications. There are many charts and tables for quickly comparing, learning or referencing various elements of DOS.

The DOS programming-support facilities have been covered. Step-by-step procedures and practices, required for program development, are also explained. Examples are contained in code samples

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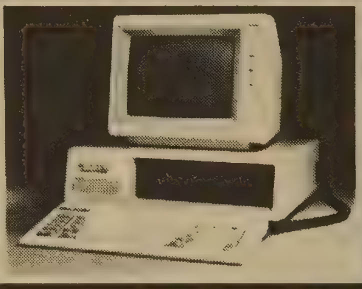

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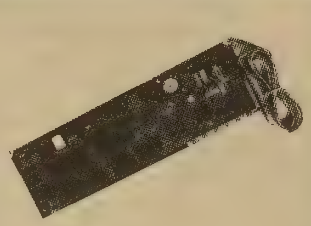

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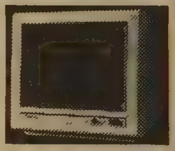

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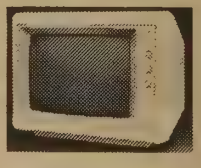

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Files and record handling are covered in one chapter and templates are provided for both FCB- and Handle-file-access methods. The hierarchy of disk-subdirectories and directory organization is treated in a separate chapter that also discusses volume labels. A third chapter examines the physical organization of disk storage including the formats and contents of the file allocation table, directory and boot sector.

Memory allocation, expanded memory, the environment block and the EXEC function are discussed in chpaters nine and ten. In the last three chapters of the section, software and hardware interrupts, the interrupt vector table, installable device drivers, and DOS filters are examined.

The reference section includes most of the system interrupts for both DOS and the BIOS. A few, like BIOS interrupt 13H (19 decimal), are not fully expanded upon. Most of the interrupts, however, are explained in great detail. The same information is available from IBM only by careful reading of the BIOS listings or the DOS Technical Reference. Interrupts for the LIM Expanded Memory Specification (EMS) are also included in a third reference section.

This book has an abundance of information on the DOS environment within personal computers. It brings together the essential material from several important references. Nearly all of the material applies equally to both MS- and PC-DOS, and many exceptions are pointed out and explained for each. The single disappointment for me was the scant coverage of terminate-and-stay-resident programs. No major example, such as those given for device drivers and filters, was provided for this class of program. What is provided is clearly presented, well organized, and extremely useful. Although I also have the references upon which is it based, it is still an indispensable resource.

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Reviewed by: *Mike Markowitz*

VIP Professional is an integrated spreadsheet program that closely emulates the conventions and command syntax of *Lotus 1-2-3* (the standard business spreadsheet for the IBM PC and compatibles). "Integrated" in this case means that sophisticated graphic charting and simple database management funcitons are part of the package. *VIP* uses many features of the "Macintosh user interface" including pull-down menus, scroll boxes, and icons. Every function that can be performed with the mouse is duplicated in keyboard commands.

There are two editions of the program: A ProDOS 8 version for the IIc and enhanced IIe requiring 256K, and a ProDOS 16 version for the IIGS requiring 512K. In both cases, the memory must be in the auxiliary slot, which is directly addressable by the microprocessor. This essentially rules out using the program on a II, Franklin or Laser.

VIP is a huge program—over 200K of machine code that loads itself completely into RAM. The ProDOS 8 version is supplied on two 5¼" disks, using all four sides: a boot disk, program overlays, sample files and utilities. The screen display initially shows fourteen rows and ten columns. This is only a small window into a huge work area

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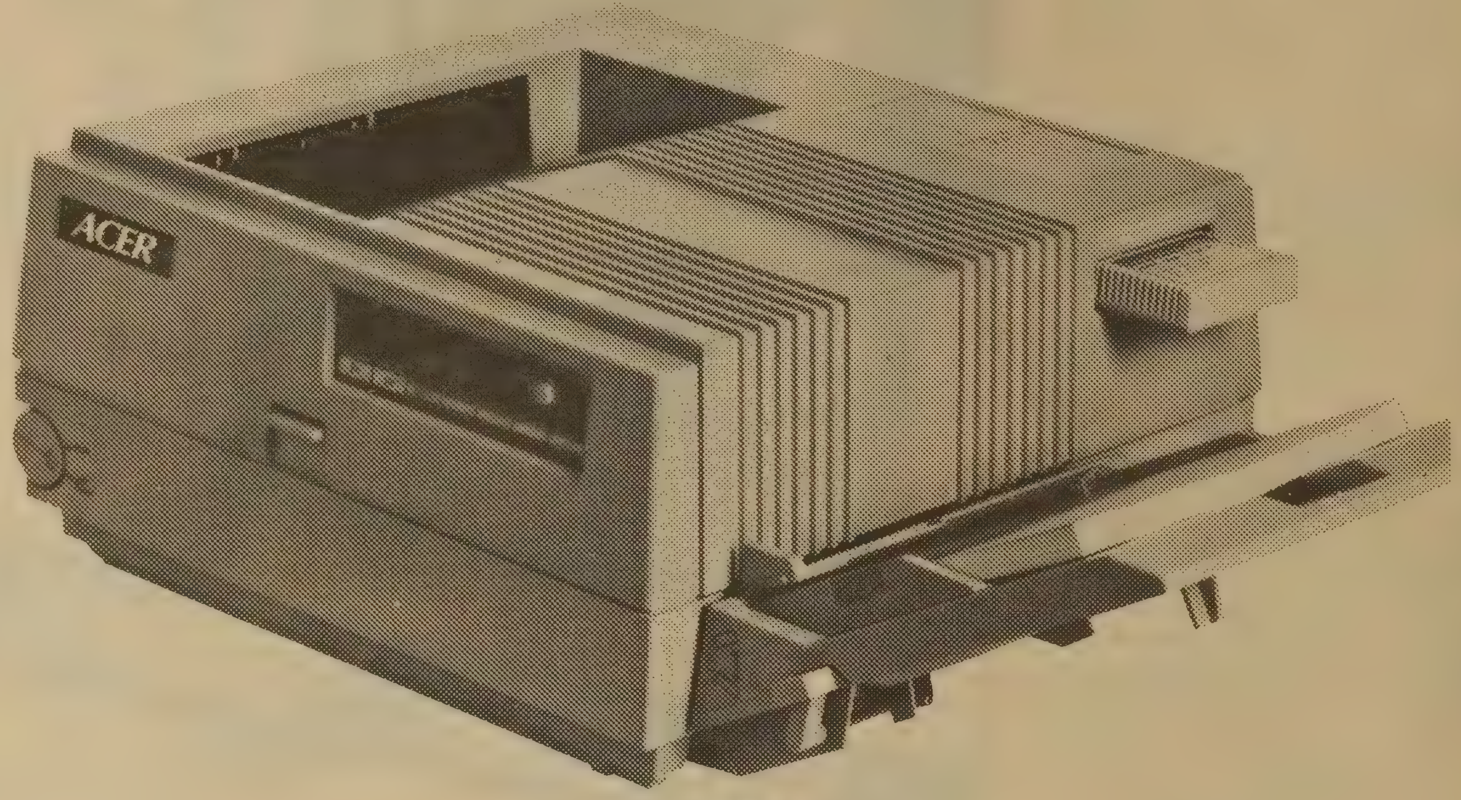

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of 8,192 rows by 256 columns. For comparison, the (unmodified) *AppleWorks* spreadsheet is 999 rows by 153 columns.

Built into *VIP* are 34 math and logic functions, five financial functions, seven database functions and five calendrical functions. These are all identical to features of *Lotus 1-2-3*. *VIP* also supports keyboard macros, which are combinations of entries and commands that can be composed in advance, named and stored as part of the worksheet, and executed with a few keystrokes. *Lotus 1-2-3* macros are virtually a programming language, capable of automating repetitive tasks and performing very complex functions. Most Lotus macros will work in *VIP*; some require patching due to differences in file structure and keyboard layout.

VIP requires a considerable investment in hardware for optimal performance. In addition to the expanded RAM, 8-bit Apples should have a Transwarp accelerator card (from Applied Engineering). A RAM Disk card would be helpful, as would a hard disk or Unidisk. The mouse is optional, and most IBM PC users making the transition to *VIP* would probably prefer to do without it. *VIP* does not support digital RGB video—if it detects an RGB card it automatically switches to monochrome. A high-resolution green or amber monitor is preferable. Since the entire screen is treated as a bit-mapped display, the legibility of text is marginal, but the graphics look very clear.

The ProDOS 16 version for the Apple IIGS is a much better value. The IIGS version supports graphics in up to eight colors (and these graphics can be printed out on an Imagewriter II with the color ribbon). The program should not be loaded from the horrible IIGS Program Launcher—this wastes 34K of RAM, which significantly decreases the size of the spreadsheet you can build on a 512K system. The publisher strongly recommends a full megabyte of RAM for serious users. *VIP* does not work with the RAM Disk created by the IIGS Control Panel; it has its own memory manager that will automatically utilize any RAM above the 512K minimum.

Both versions of *VIP* use the same 261-page spiral bound manual, which is well illustrated with screen shots, and very slow and heavy reading. Any of the many excellent introductory *Lotus 1-2-3* books would be better for a beginner, as long as you ignore everything about MS-DOS directories. Differences between the IIe and IIGS versions are covered in a 10 page pamphlet. A good understanding of ProDOS pathnames is an absolute prerequisite to using this product.

The publisher, ISD Marketing in Ontario, Canada, provides a technical support phone (not toll-free) to registered users for six months from the date of purchase. This can be extended for an annual fee.

In its documentation, *VIP* modestly claims to be "the best and most powerful spreadsheet for any commputer, bar none. This means. . .better than *Lotus 1-2-3* on the IBM and better than *Excel* on the Macintosh." This claim is somewhat overstated. On very large spreadsheet recalculations, reviewers have reported that the program slows down to a crawl.

At a list price of $250 ($300 for the IIGS version) *VIP* is well beyond the means of the average Apple home user. This is a high powered spreadsheet for the financial analyst or scientist who might work on an IBM PC environment, but is unwilling to give up a beloved Apple. Users who need presentation graphics would find *VIP Professional* especially valuable. Applied Engineering offers an attractive discount when the program is bundled with one of their boards. Versions for the Amiga and the Atari ST are also available. By not competing in the IBM PC arena, the publishers have been able, so far, to avoid legal hassles with Lotus. (ISD Marketing, Inc. 2651 John St., Unit #3, Markham, Ontario, Canada L3R 2W5. (416) 479-1991.)

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GraphicWriter

Designed by: *Gary Crandall*
Published by: *DataPak Software (1986)*
For: *Apple IIGS (512K, Imagewriter printer and color monitor desirable)*
List Price: *$149.95*
Reviewed by: *Mike Markowitz*

Any word processor that uses bit-mapped text must pay a heavy price in computing overhead—which translates into slower response for the user. The compensating benefit is the ability to integrate text and graphics. The document becomes a blank canvas, where the writer can type or paint with equal facility. This is hardly news for Mac owners, who have been doing it for years, but for the Apple II environment it still seems like magic. The Apple IIGS has the screen resolution, memory, speed and (above all) system firmware to make it possible.

GraphicWriter by Gary Crandall is the first program for the IIGS to provide effective integrated text and graphics. *GrapicWriter* introduces some unfamiliar new concepts and terminology, and it suffers from poor documentation, but with forthcoming upgrades, it could turn out to be the next *Newsroom*. Two years ago, *Newsroom* from Springboard Software, proved that it was possible to create and market a successful low-end "desktop publishing" program for school, home and small business users. *Newsroom* used 6 or 8 bit-mapped "panels" of text and graphics to compose a page. To fit the limits of a 64K RAM space, each panel had to be separately saved to disk, then read back into memory during printing.

With half a megabyte or more of elbow room, the IIGS doesn't have to go through such gyrations. A full, multicolored page can be displayed and manipulated easily. *GraphicWriter* has an uncluttered screen with a row of drawing-tool icons across the bottom, and a pull-down menu bar across the top. The word processing functions follow the standard user interface established by *MacWrite*. The drawing functions are similar to *MacPaint*, but there are innovative and powerful ways to manage colors.

The fundamental unit in *GraphicWriter* is the "region". Initially, the blank screen is a "bottomless" typing region. You can create any number of "boxed" regions that contain graphic objects or text. Like many programs for the IIGS, *GraphicWriter* shows you only about half a page of working space, but provides a toggle that gives you a reduced view of the full page. You can manipulate regions on the full-page view, but not text or graphic objects.

For users lucky enough to own an ImageWriter II printer, *GraphicWriter* has some unusual color printing options. There is a palette of 26 dithered colors (dithered colors are made by mixing pixels of pure colors and white in various proportions.) You can select "heavy paint," which will conceal anything under it, "water color," which will mix with any underlying color, and let black show through, or "dye," which will color only the black pixels in the underlying image.

GraphicWriter can easily import *AppleWorks* text files from 5¼" floppy disks. The program also accepts bit-map graphic files created with *Paintworks Plus*, or certain scanners. For Apple II users, accustomed to frustratingly incompatible graphics file formats, this is a friendly and flexible new environment.

GrapicWriter is boxed with a 70-page spiral-bound manual that is well-illustrated but amateurishly written. A tutorial covering the whole process of page composition, from start to finish, would be a great help. So would a quick reference card, or on-screen help menu. Regrettably, *GraphicWriter*

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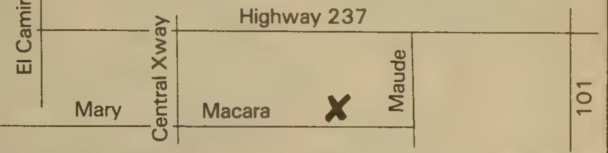

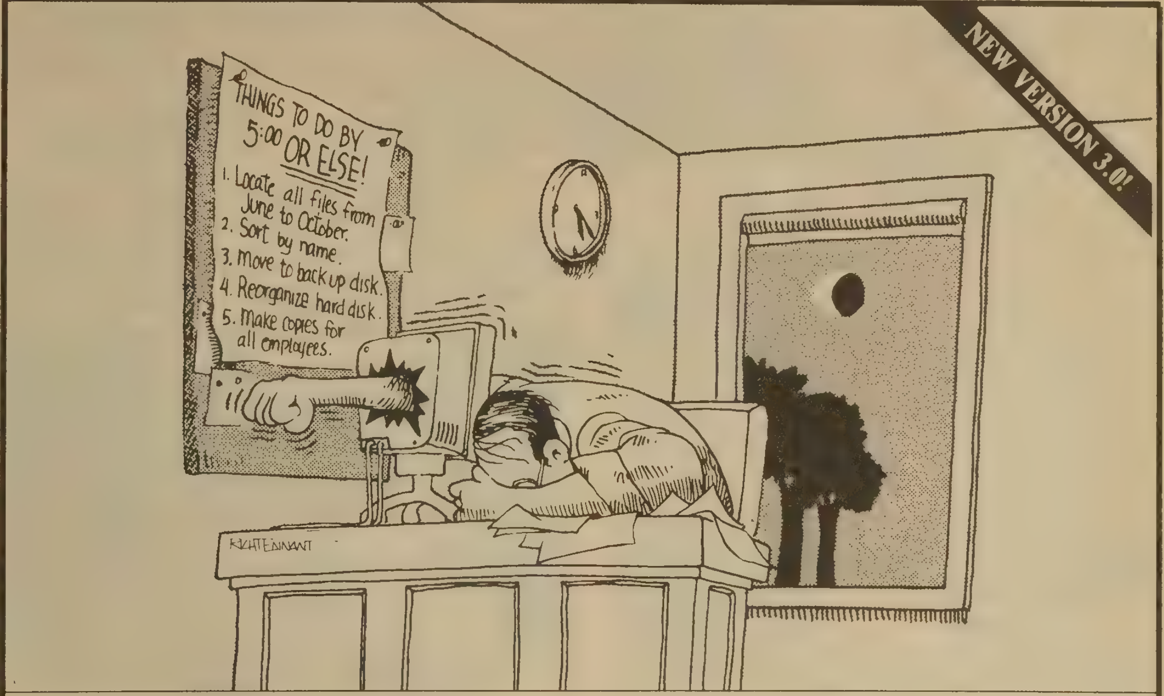
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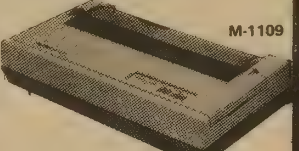

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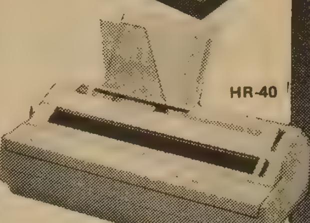

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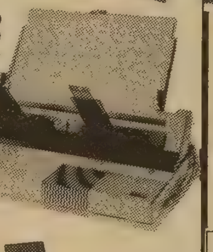
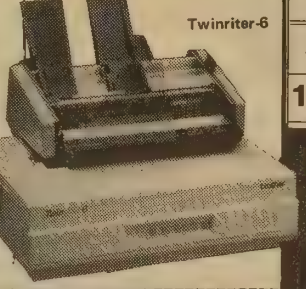


M-1509 — Our best seller! 180cps (45 cps NLQ), 136 column. Unique side-mounted cable connection would not tangle form paper and push-type tractor would not waste the first form. Single push button for near letter quality printing. 3K buffer. IBM & Epson compatible. Parallel & serial I/F $389

M-1709 — It has features similar to 1509 but high speed 240cps (50cps NLQ), 136 column, large 24K buffer. Unique push-type tractor and paper parking features. Heavy duty printhead for business use. Quiet . . .$489

NEW! M-1724 — A truly versatile text and graphic printer with its 24-pin head and 216cps output (72cps NLQ), 136 column. Advanced paper parking feature lets you switch to single sheet without removing the continuous forms. IBM, Epson, Diablo compatible. . . . . $CALL



NEW! Twinriter 6 — If you believe 2 heads are better than one, this is it! The dot matrix head creates crisp graphics and prints draft text at 200cps and its daisywheel prints letter quality text at 36cps. Compatible with the new integrated text/graphics software such as Lotus & Framework. Parallel interface . . . . $CALL

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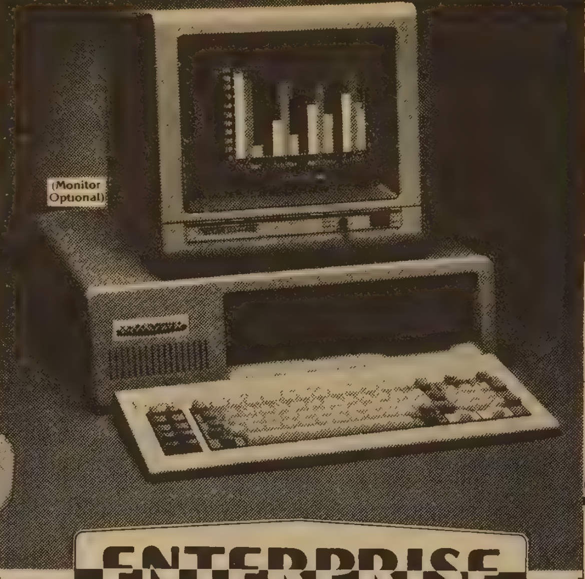

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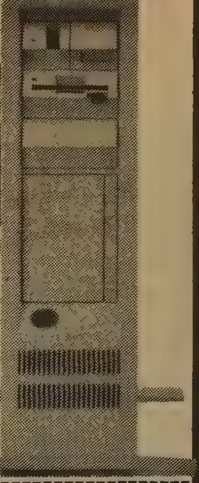
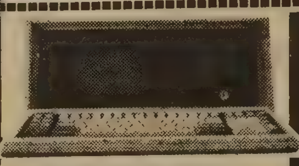
PS/2 Model 80 — 1 dr., 44-MB	$5,695
PS/2 Model 80 — 1 dr., 70-MB	$6,996
AT 339 — 1 drive, 30-MB	$CALL





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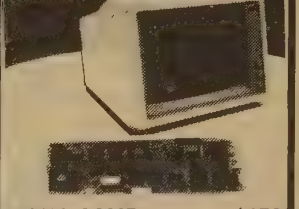

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EGA COMBO ...*complete*	$500
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Samsung 14" EGA Color. . . .	$385
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Taxan 760 — 14" EGA Color .	$485
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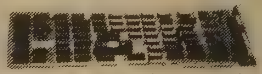
Thompson 14" RGB Color . .	$289

AST 286

CALL FOR BEST PRICES!



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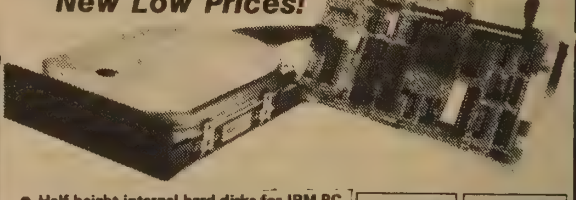

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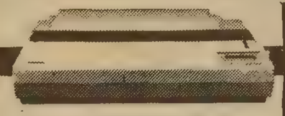

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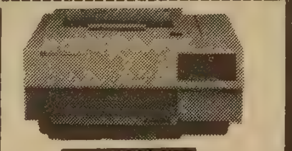

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TOSHIBA

P321SL Model 2 — 24-pin head,built-in tractor.	$499
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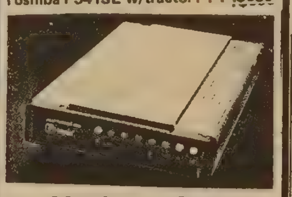
Toshiba P341SL w/tractor. . .	$689



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Prometheus 1200 Ext. modem	$249
Prometheus 1200B Int.w/Mirror	$169
Smart One 1200B Int. modem .	$99
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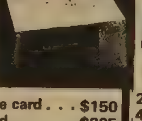

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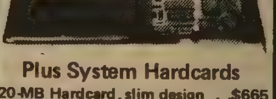

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20-MB Hardcard, slim design .	$665
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is copy-protected, but a hard disk installation utility is provided.

By releasing the program while ProDOS 16 (the IIGS operating system) is still in a relatively flaky stage of evolution, DataPak has taken a risk. The LaserWriter printer driver from Apple was not ready for the initial release of the program, but appears in the current verison (1.1R). On the ImageWriter II the program produces very clear and crisp output, especially on the high-quality text setting. Subsequent waves of desktop publishing software for the IIGS may eventually arrive with features that will blow the doors off *GraphicWriter;* but for now, this is the best product available for the IIGS users who need something better than *Newsroom.* (DataPak Software, 14011 Ventura Blvd. #507, Sherman Oaks, CA 91423. (818) 905-6419.)

DESKTOP ACCESSORIES

Partner 64

By: *Timeworks*
For: *Commodore 64, 128 (cartridge) (reviewed); IBM (Disk), Atari ST (Disk) also available*
List Price: *$59.95 & $69.96 Commodore 64 & 128; $59.95 IBM; $79.95 Atari ST*
Reviewed by: *Sue Albert*

Recently I said "Howdy!" to the *Partner 64* and we became instant friends. The creative programmers at Timeworks have jammed into a single basic black cartridge some real life savers.

After installing a rubber foot to prevent pressure on the connection and seating the cartridge firmly in the slot, the only indication of *Partner's* presence on power-up is an attractive black screen with blue text replacing the washed out blue on blue. While automatically speeding up loading on programs not heavily protected or loaded by sectors, *Partner* remains politely invisible until its button is pushed. The current program is then suspended, and a menu appears offering you an array of time-saving accessories.

SwiftDOS and Screen Print are my hands-down favorite options. Now from within the skimpiest programs I can format a disk, change file names and perform disk chores without reloading. From the SwiftDOS menu, codes may be sent directly to the printer for print style changes within *Partner,* or in my software's printing. With the Screen Print module I can print out text (not graphic) screens and capture those elusive commands that sometimes disappear from the screen just when I need them most.

For those organizational chores computers seem to generate, *Partner* has two full-featured listing programs. The Address List can be saved, loaded, searched, sorted, and printed on either paper, labels or envelopes. It can be used as an auto-dialer in connection with an autodialing modem and will auto-disconnect at the end of a call. The Phone List has all the same features with the exception of label and envelope printing.

Users with the required machine language skills can reprogram or write their own *Partner* utilities. Instructions are obtainable at a nominal charge and Timeworks will answer written technical questions.

Partner seems compatible with most Commodore 64 programs I've tried. If problems do occur with incompatibility, *Partner* can be disabled from the keyboard without removing the cartridge. *Partner* will not work with other cartridge programs or with the 1541 Flash on. No word yet on compatibility with the RAM Expansion Modules.

The well-illustrated manual is unusually clear in explaining the simple commands needed to use *Partner* functions. Most important and least encountered nowadays is the outstanding user support. The people at Timeworks are unusually concerned and helpful with problems.

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EGA Monitor	365
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POWER SUPPLY

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HOME MANAGEMENT

On Balance

By: *David Eisler*
Published by: *Brøderbund (1986)*
For: *Apple II series (128K)*
List Price: *$99.95*
Reviewed by: *Mike Markowitz*

On Balance
USER'S GUIDE

On Balance is a personal finance package that works the way people think.

The irony of home accounting programs is that the people who need them most are the least likely to use them. By temperament and inclination, people like us are unwilling to spend time adding and subtracting dollar amounts in little notebooks.

I can't be out of money; I still have checks!

On Balance represents a clever attempt to trick lazy users into responsible accounting by making the software fun to use. It is one of the best Apple II emulations of the Macintosh user interface to appear since *Mouse Desk*. The program requires an Apple IIe with 128K and extended 80-column card, or a IIc or IIGS. It ran without problems on the Laser 128.

There is virtually no setup time required. Brøderbund claims that you can be using the program in under ten minutes. The screen starts as a clean white sheet of paper. There is a menu bar with six pull-down menus: File, Transactions, Accounts, Reports, Goodies, or Customize.

Everything that can be done with the mouse can also be done from the keyboard, with twenty-seven different open-apple key combinations. Help is always available with a mouse-click or keystroke. A pop-up calculator and notepad are provided as "desk accessories." This sort of thing may be easy on the Macintosh, but in the Apple II environment it is a real programming tour-de-force.

Transactions are recorded in much the same way that you would fill out a checkbook record. You enter the day, the check number, or a letter code that identifies the type of transaction, the payee (up to 20 characters), major and minor accounts, and, of course, the amount. Major accounts are things like Assets, Liabilities, Income, Expenses, and Miscellaneous. Minor accounts are anything you want, like Groceries, Insurance or Bribes.

The remarkable thing about *On Balance* is that it can create accounts "on the fly" as you enter transactions. Up to 175 different accounts can be created, and the names or types of accounts can easily be changed. You do not have the daunting task of designing an entire financial system before you can enter a single transaction.

The program is smart enough to know whether a given type of transaction should be added or subtracted from the account balance, so you need not worry about + and − signs.

You can record up to 800 transactions a month. Each year of records requires its own data disk. You can search the data by date, by check number, by payee, by dollar amount, or by any text string. *On Balance* data can be easily converted into Appleworks' spreadsheet format, using an "export utility" provided on a separate disk.

The program can be set up to prompt you when regular payments are due, and it can even print checks. The documentation is first-rate, but no program manual can substitute for training in bookkeeping, the tax laws, or common sense. The 110-page spiral-bound manual includes a short chapter on "Principles of Home Finance" that defines such esoteric terms as Net Work and Net Income. The manual provides examples of how to enter various kinds of transactions, as a complete description of every command, option and report.

Early versions of *On Balance* were copy protected. On May 15, 1987 Brøderbund began shipping the program without copy protection. According to Nanci Buck (that's her real name!), marketing manager for the product, "We are finding that users are becoming very dependent on the fast, easy way *On Balance* helps them manage their finances: so much so, in fact, that their concerns about disk failures or possible delays in back-up disk fulfillment have prompted us to reconsider our protection policy..." Registered own-

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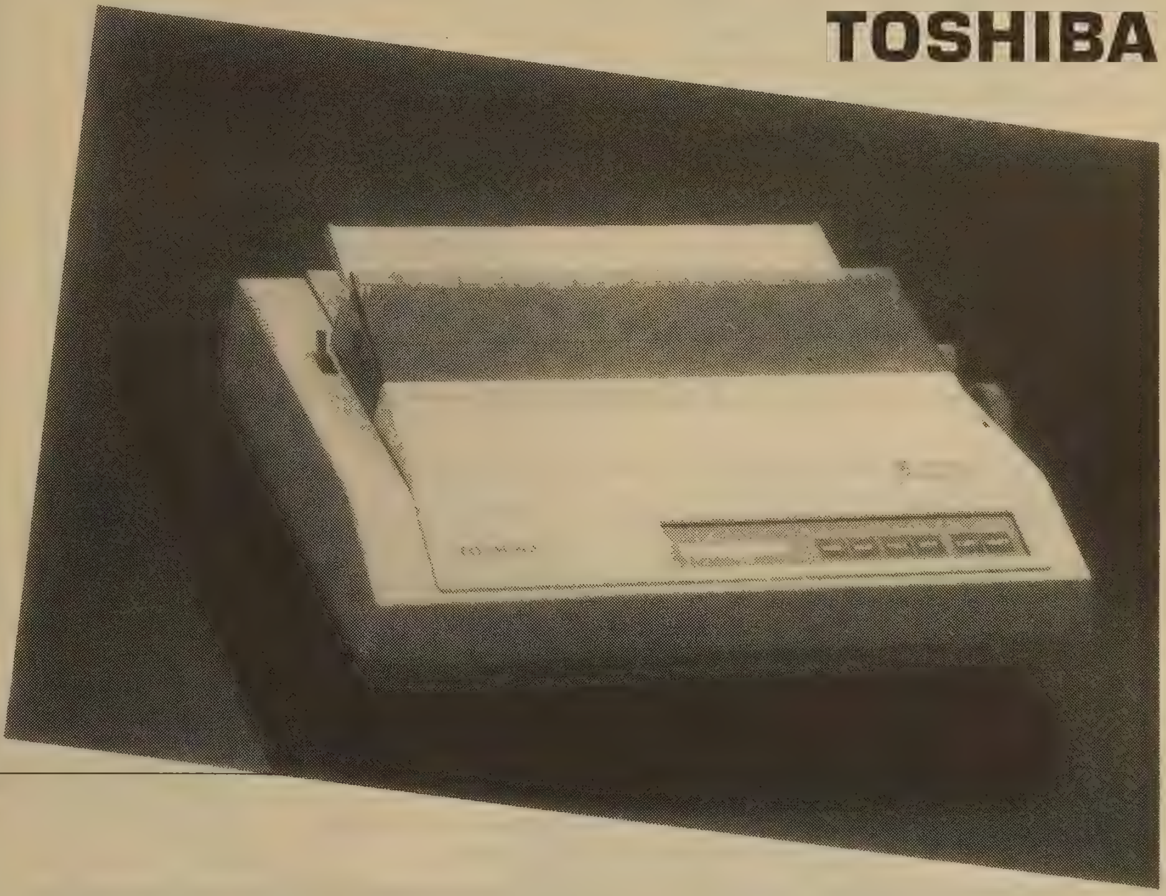

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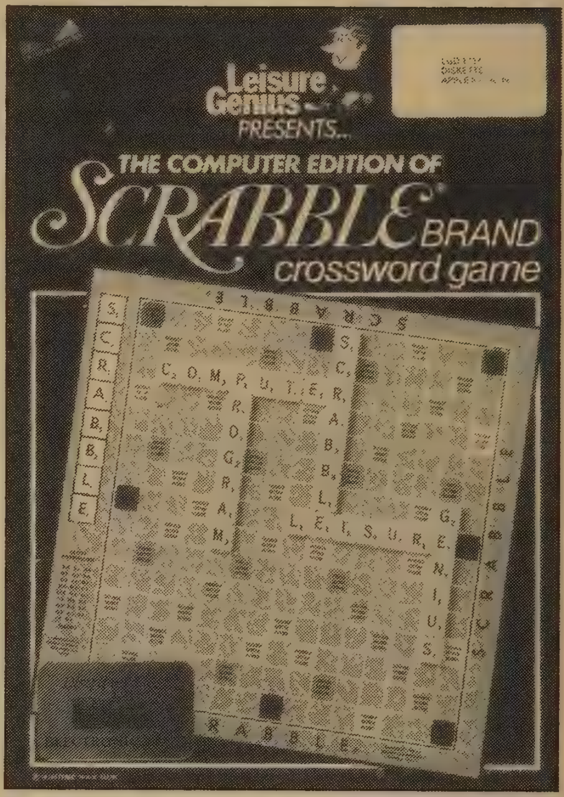
ers will be able to upgrade to the unprotected version at no additional charge. At the same time, Brøderbund will start packaging both 5¼" and 3½" disks in the same box, as a convenience for Unidisk users.

On Balance is probably the best personal finance software ever created. It is designed for the way people really think and work, not the highly organized, disciplined way accountants would prefer. It would be particularly suitable for Apple users who run a small business out of their homes (as long as there are less than 800 transactions a month). The cost is rather high for personal software, but not unreasonable considering the potential value of the product. (Brøderbund, 17 Paul Drive, San Rafael, CA 94903-2101. (415) 479-1185).

GAMES



Now available for a variety of machines, the computer edition of Scrabble offers plenty of challenge for the word gamer.

The Computer Edition Of Scrabble

Published by: *Leisure Genius*
Distributed By: *Electronic Arts*
For: *Commodore 64 (revised), Macintosh, IBM*
List Price: *$34.95*
Reviewed by: *Sue Albert*

Few of us are unfamiliar with the board game *Scrabble*. Since 1948 it has entertained several generations and become a classic. Now a computer version puts some elctronic zip into this golden oldie without compromising the original. The only things I miss are the click and feel of lovely wood titles.

For those of you that somehow missed afternoons hunched over the dining room table with a dictionary on your knees, *Scrabble* is a crossword puzzle game. Players form words from alphabet tiles, with higher values given to less frequently used letters. Points are scored by placing your tiles so they make the most use of letters from previous words. You can use any dictionary words except proper names, foreign words, abbreviations or words with hyphens or apostrophes. Extra points are given when tiles form more than one word, and some board squares double or triple the points for a letter or a word. Several blank tiles act as "wild cards." The game is over when all the

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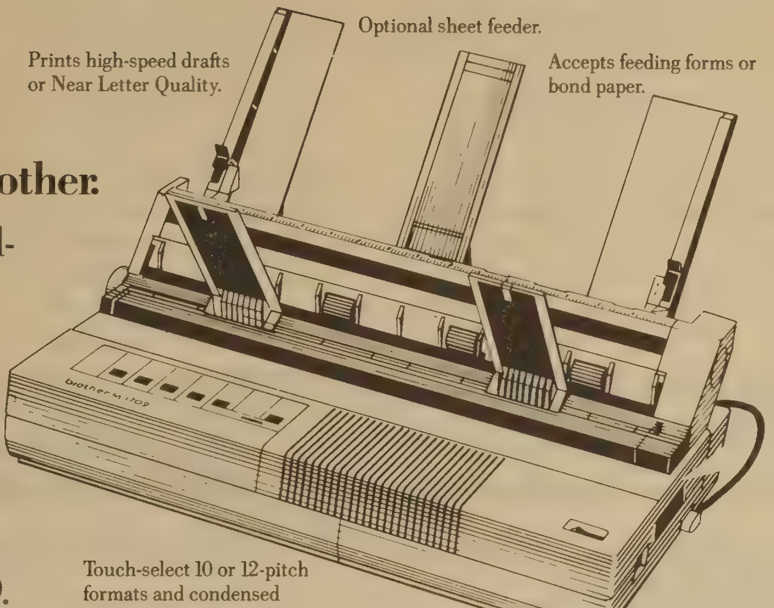
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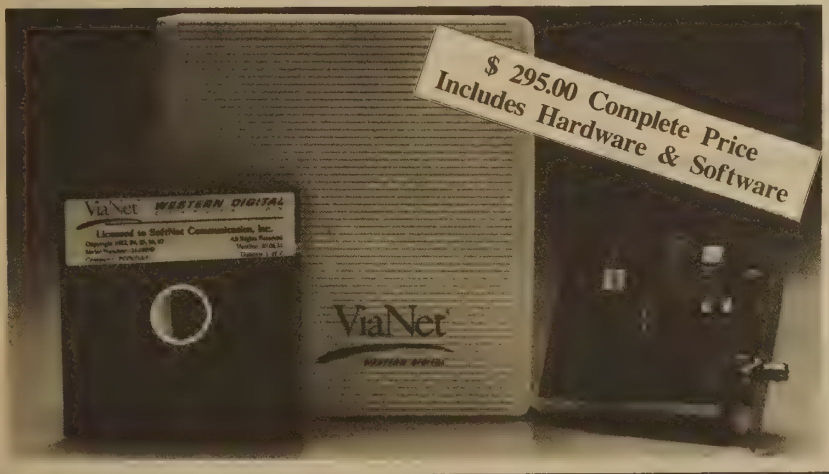
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tiles are used or no new words can be formed. The manual gives a clear explanation of all rules before proceeding with loading and computer play instructions.

Computer Scrabble is played exactly the same way, with only minor accomodations for the board being on a video monitor. The board takes up three quarters of the screen alongside a narrow scoreboard containing the players names, running scores, a status box, and a keyed-in option window. Up to four may participate. The computer can play one player, or for an automated game, all the challengers.

The computer can play at levels 1-8. Unfortunately I have only one level. An adolescent whiz, I found the brain cell loss of middle-age all too evident when I challenged the computer at higher levels. This game can keep you on your toes. One innovation is that you have a choice of watching the computer opponent "think" and try out different possibilities before placing its tiles. I was gratified to find it took slightly more time "thinking" as the game got tougher.

Scrabble uses the computer to advantage in the options. Built in it is a 20,000 word dictionary, but if the computer challenges your word, you may bypass with a keystroke. The honor system or your opponent should keep you straight. For serious competitors there is a time clock available. You may, by forfeiting your turn, change one or all your tiles. If inspiration fails you just "juggle" the tiles. The computer will even give you a hint if you are at a dead loss. Tile or board values are visible from "Options." If you are interrupted, you may save the game to disk and resume it later.

There are no print functions in *Scrabble*. The program seems solid and bug free, and I could only wish the board colors could be altered to lessen eye strain. I must warn users having a Cardo +G Printer Interface that it must be disconnected to get the disk to properly load.

So forget the dining room table, sit you down at the keyboard and spend a long afternoon with a game that lets you painlessly hone your spelling and vocabulary while having a rousing good time.

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Shanghai

Designed by: *Brodie Lockard*
Published by: *Activision (1986)*
For: *Apple IIGS (512K)*
List Price: *$44.95*
Reviewed by: *Mike Markowitz*

The origins of Mah-Jongg are obscure. Some say it was invented by Chinese sailors and fishermen to pass the time on long sea voyages. In the 1920's it enjoyed tremendous popularity among the fashionable and decadent. By the 1950's it had dwindled to a quaint pastime of a few women's clubs.

It is an exotic, almost sensual game, with its great piles of brightly painted, engraved ivory tiles that make a distinctive click as they are slapped down on the table. The rules of play are extraordinarily simple, but the scoring system is dismayingly complex, under both the Chinese and American rules. Large sums have traditionally been staked on Mah-Jongg games; Americans and Chinese both love to gamble.

In developing a version of this ancient game for the computer, Brodie Lockard has kept the bright, exotic feel and dropped all of the complexity. The result is an "addictive" game called *Shanghai* that combines elements of chance and skill in a particularly pleasant way.

In adopting a Macintosh version for the Apple IIGS Ivan and Carol Manley took a significant risk, with a shaky, prototype operating system and a new computer, of unproven market potential. Rather than limit the resolution of the graphics, the developers decided to require 512K of RAM (the Apple IIGS is sold with only 256K on the motherboard). The gamble has paid off.

After opening with a super high-resolution picture of a red-lit opium den (which probably occupies more disk space than most entire games for the 8-bit Apple), the game builds a stack of 144 colored tiles on the screen. This is called the "dragon" and follows a precise pattern, although the position of the individual tiles is randomized for every game. There is a graphic 3-dimensional perspective that gives the player a clear impression of the arrangement of the stack.

The object of the game is to remove pairs of matching tiles. There are three suits of tiles—dots, bams and craks—numbered from 1 to 9 with four of each number. There are also 12 dragon tiles, 16 winds, 4 seasons and 4 flowers. A tile may only be removed if it is not blocked ot the left or right. You may select a tile by clicking on it with the mouse. You can double click on the second tile to remove it immediately, or you can make your move more deliberately, by clicking on a button that pops up when the second member of a pair is selected. Some games cannot be played to completion, since critical sets of matching tiles may be "buried" underneath one another. Tough luck.

The game will not let you make an error. There is a full set of pull-down menus, providing options to save a game in progress, establish time limits, revise the rules, get help or toggle the sound.

Although *Shanghai* plays smoothly enough, it is not immune from the bugs that seem to plague the first generation of 16-bit software for the Apple IIGS. On some early copies, when you win, the program tries to load a congratulatory screen, but crashes into the monitor, after flashing a forlorn "picture load error—please contact Activision" message. Activision provided a simple patch that

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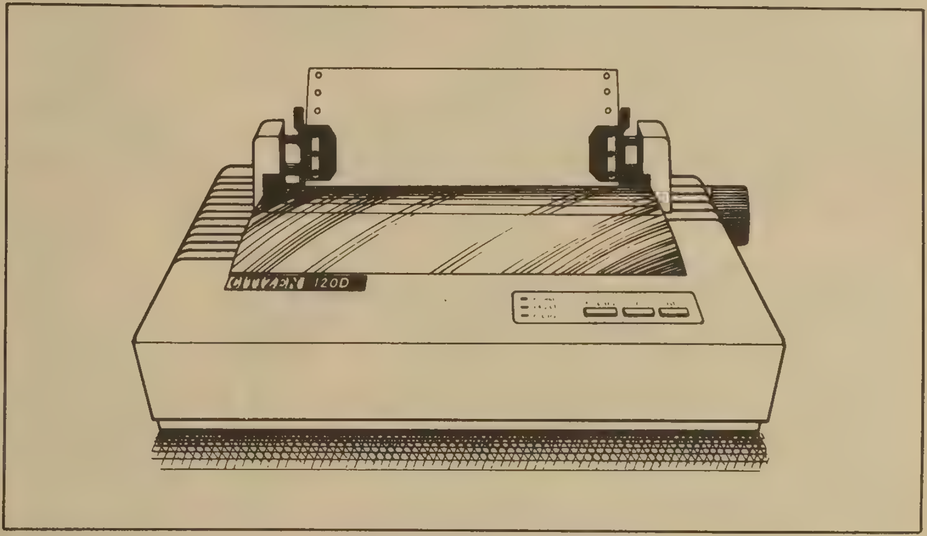

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avoids this problem: "Each time you initially load the program, pull down the file menu and select open. From the dialog box select cancel, and then continue to play." On another occasion, the program left part of the edge of each tile behind the screen when the tile was removed. This glitch seems intermittent.

Although there are options for two-player and multiplayer games, most users will probably pursue *Shanghai* as a solitary addiction. The designers have thoughtfully provided ways to "cheat" by backing up one move at a time, or by "peeking" under a tile (this forfeits the game, however).

Shanghai is simple enough to please the youngest player, and subtle enough to interest the deepest strategist. It is a good example of the extraordinary graphics that can be realized on the Apple IIGS. (Activision, 2350 Bayshore Parkway, Mountain View, CA 94043. (415) 940-6044.)

Silent Service:
The Submarine Simulation

Designed by: *Sid Meier*
Published by: *MicroProse (1986)*
For: *Apple IIGS (256K)*
List Price: *$39.95*
Reviewed by: *Mike Markowitz*

Compared with today's nuclear-powered and missile-armed leviathans, the submarines of the Second World War were so feeble that it is hard to believe they were nearly the decisive weapons in two oceans. Subs were often slower than the ships they hunted. They could stay under water for only a few hours. Their torpedoes were short-ranged and unreliable, particularly in the U.S. Navy. Yet with a little luck and skill, a submarine could sink the mightiest warship.

Silent Service is a simulation of U.S. Navy submarine operations in the Pacific between 1942 and 1945. The Apple IIGS version shows how dramatically the sound and graphics of this machine can enhance a game. You *become* a submarine Captain, moving between battle stations in a realistically detailed control room. Click the mouse pointer on the periscope and the screen becomes the view through the periscope. Click on the map table and you have a chart of your position, and the location of any detected enemy ships. Click on the ladder down and you can check damage. Click on the ladder up and you can scan the horizon with binoculars from the bridge (if you've surfaced). The effect of weather on day and night visibility is realistically modeled.

You can steer, change speed, aim and fire by clicking on the appropriate icon at the bottom of the screen. Mouse-haters (rodentophobes?) can use a full set of keyboard commands for all the game functions. Basically, this is a game of point-and-shoot. Even at this early date, American submarines were equipped with a Torpedo Data Computer (TDC), a sophisticated analog device that automatically set the torpedo course based on predicted target motion. There is therefore no need to "lead" the target (unless your TDC is on the blink. . . .)

On the surface, you can fire your deck gun, using the + and − keys to adjust your aim, based on spotting the shell splashes.

The submariner lives in a world of sound, and digitized sound effects play an important role in the game: the sonar "ping" of approaching destroyers, the splash of depth charges hitting the water, the whoosh of a torpedo leaving its tube, and an ominous creaking sound when you exceed your safe depth. *Silent Service* does not live up to its name—there are plenty of explosions, so if you have amplified speakers hooked up to your IIGS, you might keep the volume down low, as a courtesy to the neighbors.

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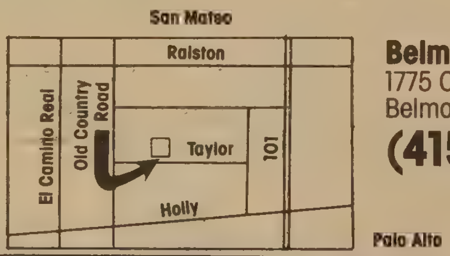

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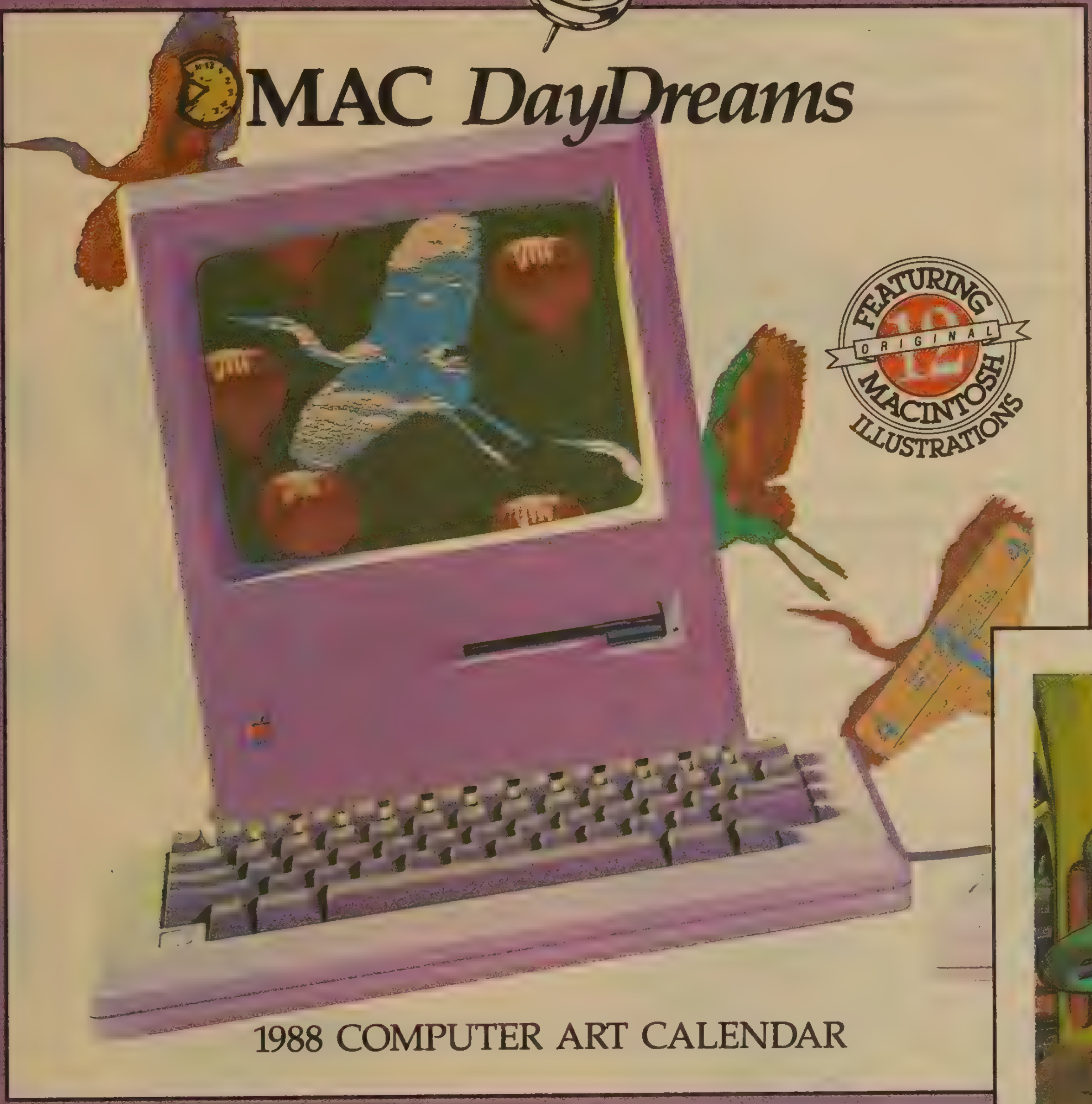
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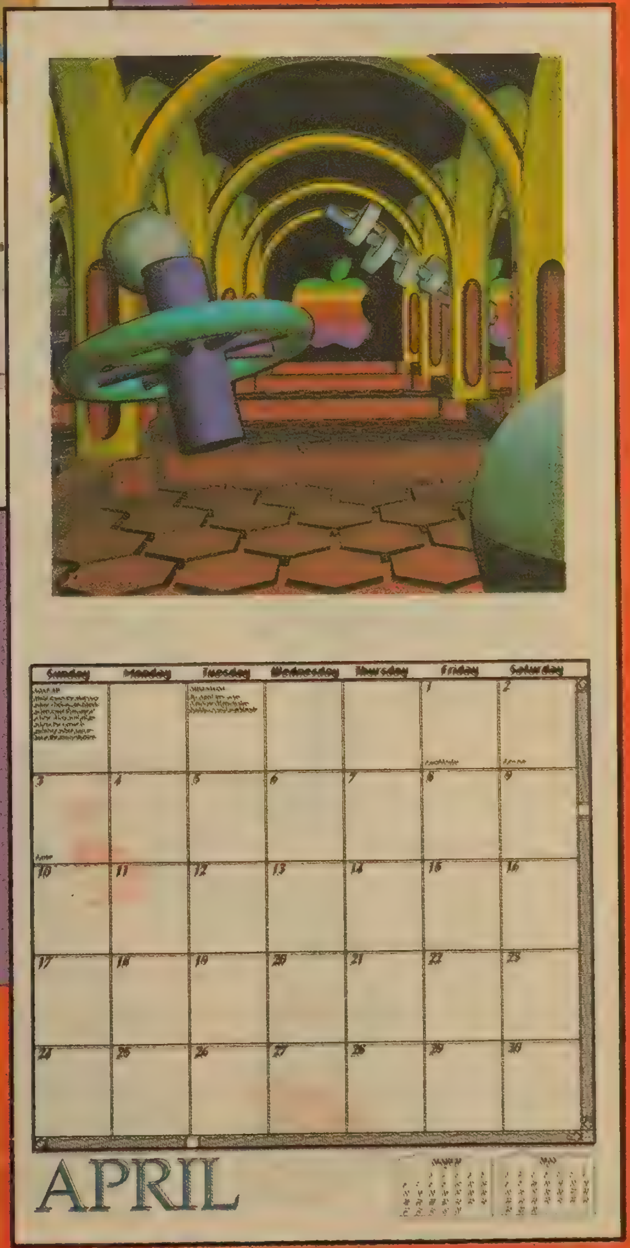
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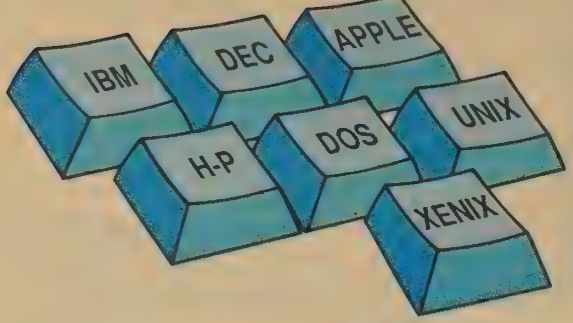

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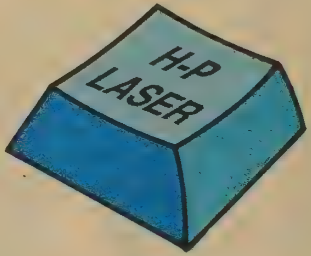

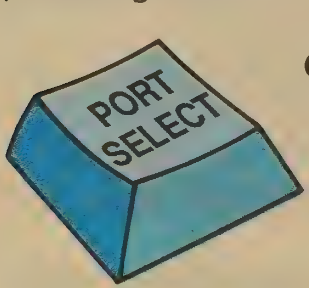

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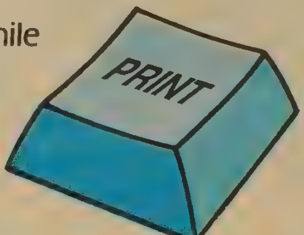

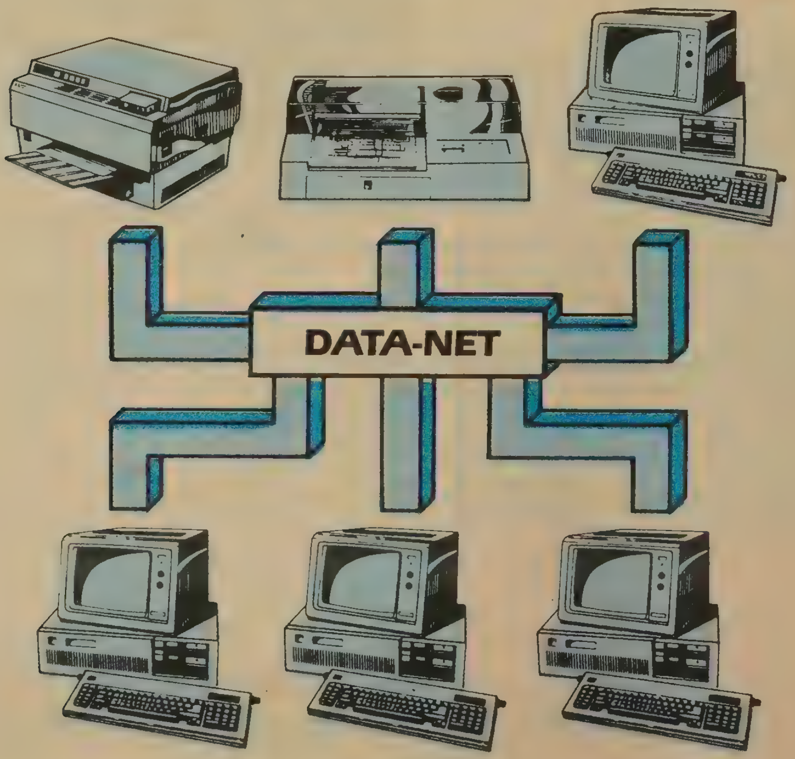

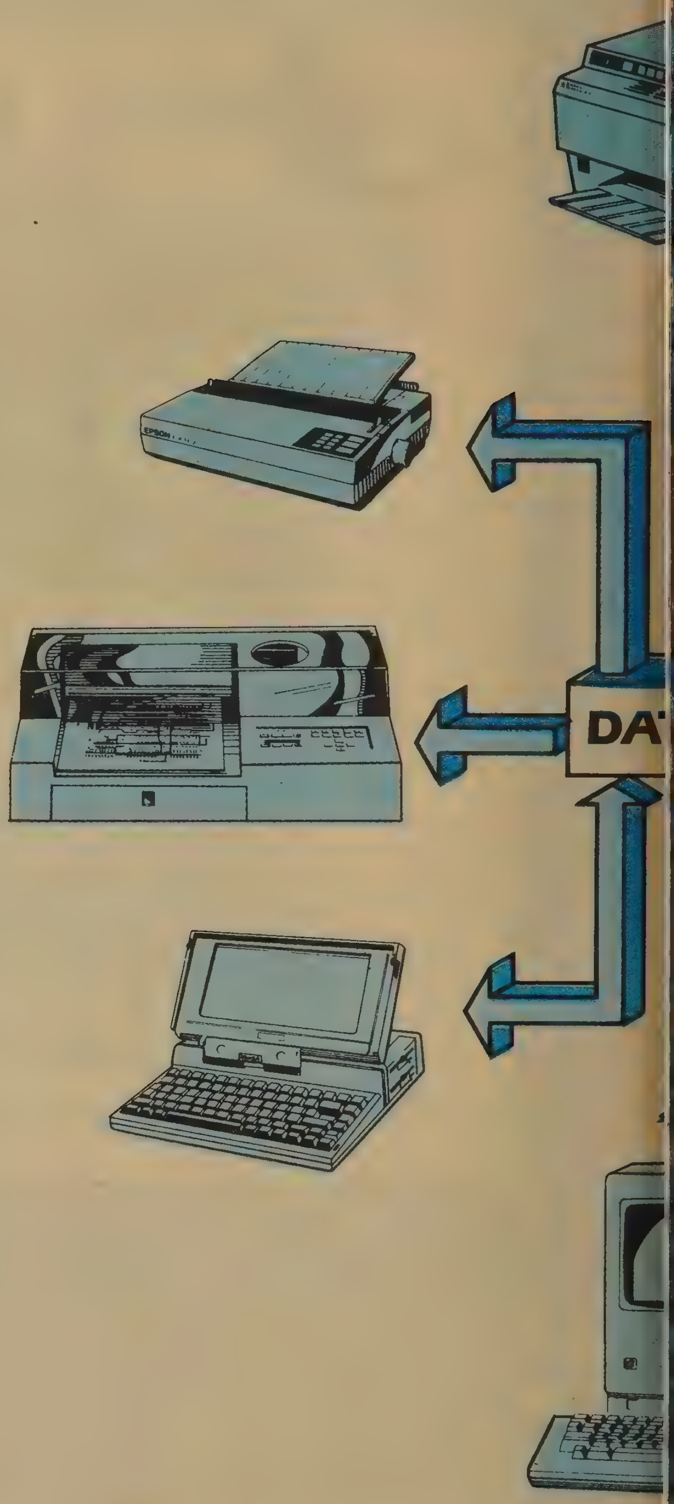

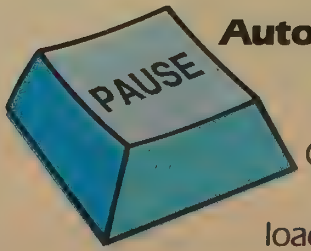

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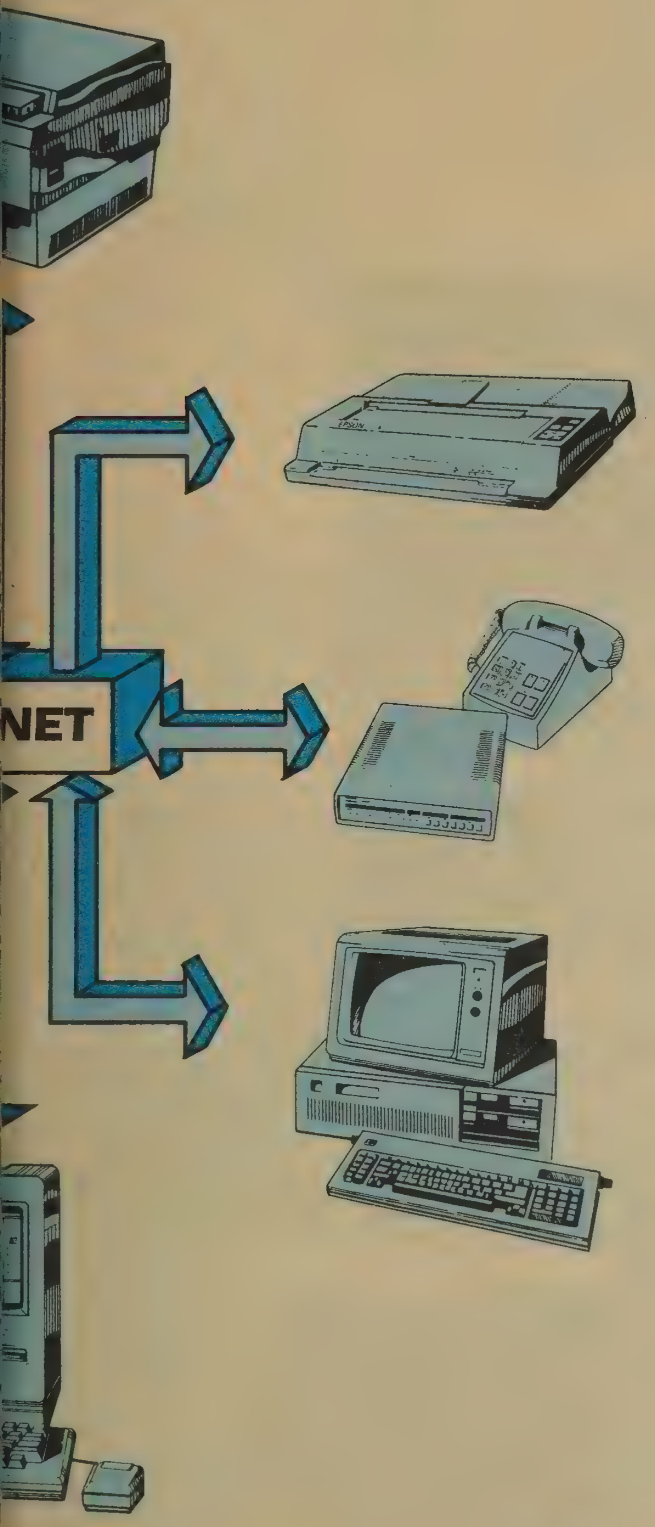

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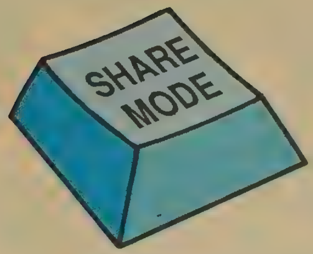
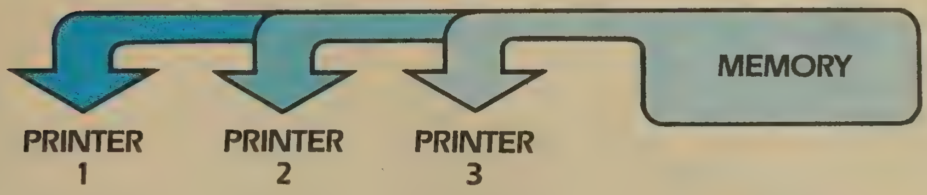


Tandem printing option saves you down time and service contract costs. DATA-NET's proprietary program routes print data to the directed or next available printer.



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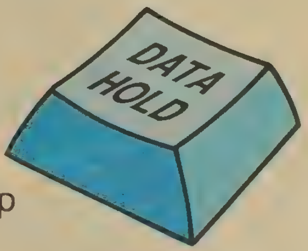

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One of the first maneuvers to practice is a 180-degree turn, to bring your stern torpedo tubes to bear on the target when your bow tubes are empty. This is also handy for running away. You can even pull the favorite old trick of movie submarine captains: pressing the ? key will send up an oil slick and debris that may fool the enemy into thinking you're dead.

The designers made a few compromises with reality, to make the game playable. Convoys are pretty hard to find if you hang around the shipping lanes. There are no enemy patrol planes to make your life miserable (submarines caught on the surface by attacking aircraft were almost helpless). Your periscope includes an automatic range-finder display (range estimation was actually a tricky business. . .). You can only have four torpedoes in the water or four shells in the air at one time—the program does so much number-crunching for every shot that the graphics seem to slow down until the microprocessor catches up.

The game can be played on three levels. "torpedo/gun practice" lets you blast away at four stationary hulks. "Convoy actions" recreate six historic battles from different periods of the war. "War patrols" begin in port, extend over several battles and end when you return to port, or sink. You cannot save a game in progress, but you can record your victories on the disk.

A 47-page manual is packed with historical notes and tactical hints. The game is copy-protected, but registered owners can get a backup for $10. Any IIGS owner interested in naval history will want to own *Silent Service*. (MicroProse, 120 Lakefront Drive, Hunt Valley, MD 21030.)

Ring Quest

Designed by: *Dallas Snell*
Published by: *Origin Systems (1986)*
For: *Apple II series (64K)*
List Price: *$19.95*
Reviewed by: *Mike Markowitz*

"The Ring of Chaos has possessed the enchantress Lisa and threatens the very fabric of the universe. Unless it is reunited with the Ring of Order, life as we know it may come to an end. The Ring of Order has now found its way into your hands. . . ."

Ring Quest is an illustrated fantasy adventure game. It is designed to appeal to those who love J.R.R. Tolkien's world, while skirting the edges of emulation enough to avoid litigation with the fierce orc lawyers who guard the literary properties of the Tolkien estate.

On the box cover we have the obligatory dragon and scantily-clad, heavily muscled swordsman (steroids must be legal in the Land of Balema). The head of a green-skinned enchantress hovers in the background, badly in need of a conditioning shampoo.

The game follows the familiar conventions of fantasy adventure gaming; i.e., it is essentially a scavenger hunt through a very rough neighborhood. You move in various directions, pick up weapons, spend money to buy information from friendly wizards, and attempt to kill monsters that impede your progress. Neither the bow and arrows

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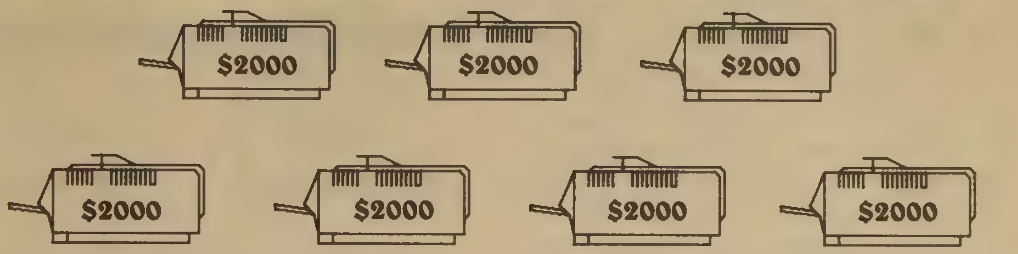

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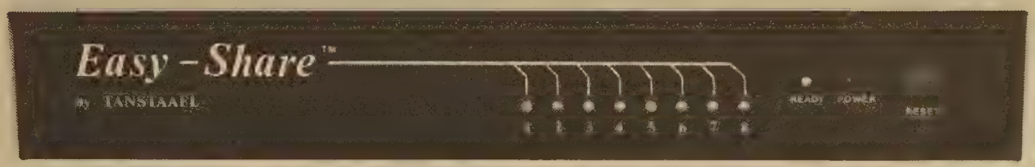

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nor the silver dagger is effective against the Manticora. I'm still looking for something that works....

You begin at an eightfold intersection on an open plain. There are mountains, forests, a flaming chasm, and an island with an ill-tempered werewolf. There is also a mountaintop castle where the goal of your quest must lie, but is protected by an impenetrable green forcefield. From time to time, the enchantress will appear, to harass you with spells.

The game is illustrated with colorful graphics, which fill most of the screen, except for a four-line text window. You can speed play by toggling the graphics off, which gives you full-screen text. The text parser (the software that interprets your commands) is rairly unsophisticated, as you might expect for a game constrained by the limits of 64K. There are 80 illustrations, over 100 locations and two little "arcade games" in the adventure. In the first, you must climb to the top of a cliff while dodging falling boulders and snakes. In the second, you must fly down to a platform in the midst of a flaming pit, while avoiding fireballs and arrows.

There is an amusing booklet that provides a background for the story, a quick reference card, and a fragmentary map on plastic laminated stock that the player can mark up with an erasable pen (included). The program uses both sides of a disk (DOS 3.3 format) but if you have two drives, side B can be copied, to speed play. A quick reference card explains the very simple command options.

Ring Quest would be a good choice for a beginner. It is a solid reworking of familiar material, with puzzles that are challenging, but not infuriating. The game is nicely packaged, and very reasonably priced. More advanced gamers would probably find it a bit outdated, since the state of the art in both graphics and text parsing has gone well beyond this level. (Origin Systems, 340 Harvey Road, Manchester NH 03103.)

Go Fish

By: *Netherall Software*
Published by: *HRM Software (1987)*
For: *Apple II series (48K) one drive required, color monitor optional*
List Price: *$69*
Reviewed by: *Mike Markowitz*

Go Fish is a computer simulation that provides a realistic adventure for any young person (Grades 6–12) considering a career as the bookkeeper of an English fishing trawler. While worrying about the price of mackerel in Aberdeen, the dangers of running aground on the Irish coast, and the high cost of diesel fuel and maintenance, the player can absorb quite a bit of economic geography.

Originally developed in England for Cambridge University Press. *Go Fish* is designed for classroom use, with extensive student activity in filling out worksheets and forms copied from masters provided with the Teaching Guide. This illustrated looseleaf manual is excellent, with detailed instructions and background material. There is a cutaway drawing of a typical stern trawler, sketches of 18 different fish species, harbor charts, and ship's logbook sheets. If the British Isles are not your cup of tea, you can play the game on waters surrounding an imaginary continent.

The game screens alternate between a small navigational map, where you set course, and a view of the ship's bridge, with buttons for various options. You can check the hold, which displays a view of the ship with blocks filled in to show how many tons of fish are stowed in cold storage. You can use sonar to find any schools of fish within 100 km. You can check the market prices at any of four ports, or radio for help when you run aground. There is a sizeable salvage fee deducted

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from your account each time this happens.

The objective in *Go Fish* is to make as much money as possible. Maintenance, fuel, crew wages, and salvage fees are paid out of the proceeds of your catch. You can trawl anywhere, and your catch can range from nothing to a whopping 20 tons. The catch will decline in an area that is over-fished.

It is far too easy to run aground. This never happens to British seamen. It is also far too difficult to get back into a port, unless you exactly retrace your course. The problem is the screen resolution. You have to be on target almost to the nearest pixel. There is no way to "zoom" in for a detailed view of your position. This is both unrealistic and frustrating.

Go Fish is copy-protected. One free backup copy is provided with the program, and HRM Software will replace any program disk that is damaged (a lifetime warranty.) The game runs without difficulty on the Apple IIGS.

Generally, I dislike simulations that require a lot of record-keeping on paper. If I want to muck about with little bits of pager, then I don't need a computer. There are some good ideas in this program, but *Go Fish* seems too dull to capture the imagination of it's intended audience. It would be greatly improved by some adventure game elements, and better graphics. (HRM Software, 175 Tompkins Ave., Pleasantville, NY 10570. (800) 431-2050.)

Alternate Reality— The Dungeon

Published by: *DataSoft*
Distributed by: *Electronic Arts*
For: *Commodore 64/128 ($39.95), also Atari, Atari ST, Apple II*
Reviewed by: *Sue Albert*

The Dungeon . . Eiiiii . . You should live so long! In this integrated sequel to *Alternative Reality—The City*, your fantasy alter ego is lost in a dungeon that lives up to your lowest expectations. No place here for Mr. Nice Guy. Being friendly to one creature automatically makes you the enemy of others. This motley crew starts on the lowest level with a nasty, aggressive mold and goes downhill from there.

Trust? Hope? Forget it! Even the diseases are sneaky. The world of the dungeon is at war, and you must fight, fight, fight your way through the mixed metaphors of mangled mythologies, using weapons ranging from the utterly fantastic to the latest Kung Fu contraptions. Occasionally there is help, but only at a price. The computer keeps tabs on your gains and penalties and lets you resurrect your character for another try after a "fatal" encounter, giving you a demerit in intelligence each time you decide to return. Is this trying to tell us something?

OK, so I'm bitter! I have no aptitude for fantasy quest games and never "live" very long. The Dungeon, I must admit, may be the most intricate fantasy realization I've seen to date. This very complete world has its own "time," three levels, peculiar elements, a host of supernatural life forms, even a religion.

I was impressed by the music. The introductory screens are an extravaganza with animation and an original theme song with sing-along lyrics. The detailed, colorful game screens are small and have simple animations with some sound effects and music. The illustrated manual is very thorough. There can be a fair amount of disk swapping using the two "flippy" disks, plus your character disk, without any provisions for dual drives or the 1764 Ram Expansion. You will use the joystick much less than the keyboard. Be prepared for a rather startling,

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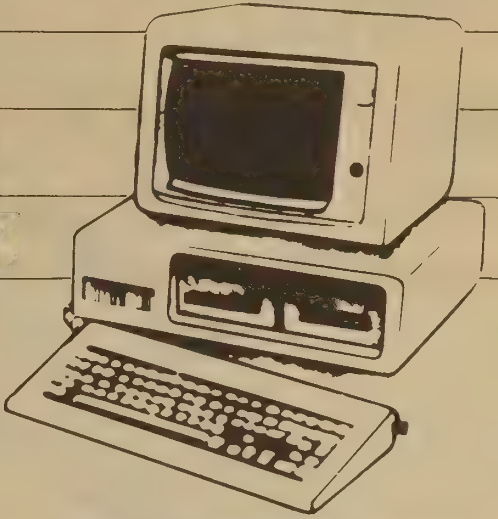

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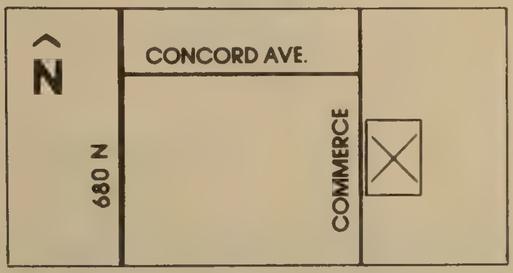

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but harmless disk drive spinning when the disk is removed for a swap.

God forbid I should live there, but if you have a penchant for Black Magic, monsters, and medieval guilds, and posses a good sense of direction and quick reflexes, you might want to spend a prolonged and exciting visit in this alternative reality.

Dan Dare, Sanxion and Delta Patrol

By: *Virgin Games Ltd. and Gang of Five, Stavros Fasoulas and Thalamus Software Ltd.*
Distributed by: *Electronic Arts*
For: *Commodore 64 ($19.95 each)*
Reviewed by: *Sue Albert*

Electronic Arts has recently begun to distribute a new "affordable" line of fast-paced arcade style software from other countries under the "Amazing Software" label. These come in simple, colorful sleeves and have minimal but adequate documentation. The games are familiar in their overall style, but offer many levels of play and high quality graphics, animation, sound effects and some unusually good computer music. All can be controlled by either joystick or keyboard.

In *Dan Dare, Pilot of the Future*, an English comic strip hero becomes an interactive adventure game. With Stripey, his bouncy little alien pet, Colonel Dan must rescue two friends from underground caverns on a nuclear-armed, guided asteroid hurtling toward the earth. Combating Treen guards, he must defeat Mekon, the evil alien mastermind, destroy the asteroid and escape in his ship with his comrades to safety. The graphics are comic book style and there is plenty of action, although I found Dan a tad sluggish in a fight. There are lots of objects Dan can use in his search, and of course he is armed with some deadly grenades. You must watch the time and not waste Dan's strength. Messages appear on the screen to warn and instruct you as you search the maze of caverns. This game has a tongue-in-cheek wit and should prove entertaining as well as economical.

The next two games fall into the classic space ship, shoot 'em up school. Stavros Fasoulas has filled the many scenes and levels with gorgeous color and downright classy music in both *Delta Patrol* and *Sanxion*. Although the pace is fast, I did manage to get to the second level on both games after an hour or so of intense play. These games are refreshingly direct. You are challenged by odd vehicles and frustrating space obstacles (like the Freudian, puckering "space donuts" in *Delta Patrol*) that you must blast through in your deepspace patrol of the dangerous and varied no-mans-land of the Delta space sector. With this program the screens are actually more attractive than the sleeve's photo illustration.

As a pilot on *Sanxion* you must cleanse your sector on the planet of all alien invaders, then pass complex training tests for bonus points. After patrolling ten sectors you get a promotion and the privilege of fighting more invaders on the "dark side." Be sure and let the intro screen music play all the way through at least once on this disk.

If your fingers and blood pressure can take it, you will be in for some long hours of fun and surprises with both these games.

Legacy Of The Ancients

By: *Quest Software*
Published by: *Electronic Arts*
For: *Commodore 64/128, (Apple II+, IIc, IIe version due)*
List Price: *$39.95*
Reviewed by: *Sue Albert*

I'm a very busy person with a battered but surviving work ethic, so games have to win *me!* The winningest games I've encountered lately seem to be coming out of Electronic Arts. Innovative if not always original, their recent games have solid, bug-free operation, now enhanced by fast loading that ends those "EA hypno-nods" acquired from staring at their flickering logo during five-minute loads.

Not only am I a busy person, I am a female person, so quest games have never held much attraction for me. In literature the women in quest classics usually spend their time at weaving, waving hankies at jousters or clutched in the scaly forepaws of hot-breathed monsters. They rarely traveled or had much fun.

Legacy of the Ancients however, has a novel preview mode that gives you a provocative glimpse of the many attractions of the mythical world of Tarmalon. My mind said "You've come a long way baby!" as *Legacy* pandered to my weaknesses: graphics, animation, sound, and humor. This program has graphics so good you might mistake your C64 for an Amiga. After choosing and saving a custom "character" to disk you quickly start the quest in the cavernous maze of The Galactic Museum built by the Ancients of the title. Your footsteps echo as you walk the brick halls past torches that flicker and crackle as you pass. Approaching an arch you hear the static of one of the many TV-like screens that are animated with special jeweled coins to offer you advice, weapons, secrets, gold, and doorways into the outer world.

The outer world is seen and heard from a birds-eye view, and is a very dangerous place where you are constantly approached by 30 different creatures with ulterior motives. Many are spoiling for a fight, but some have useful items to sell and a few are even good to eat. Twelve different towns offer haven for a traveler, with opportunities to increase your wealth and skills. Here you can bank, borrow gold, purchase weapons, magic spells, transportation and supplies, get wounds healed and have your fortune told.

There are several quality games-within-a-game in *Legacy of the Ancients*, like Blackjack, Flip Flop, and Stones of Wisdom. The training schools are also exciting games where improved skills help you to survive journeys to the elegant castle and visits with denizens of the creepy dungeons, both abounding with treasure, magic, and adventure.

Legacy of the Ancients is easy to use with the keyboard and even easier with the joystick. Holding down the joystick button activates a command menu that frees you from typing. The brief manual explains commands and the characteristics of objects and creatures, giving useful hints and clues. The included Access Code Wheel is used when returning to the Museum and makes life more complicated for "realtime" pirates.

I can envision weeks of exciting entertainment with *Legacy of the Ancients;* it'll be a nice change to enter a male myth and start waving a sword instead of a hankie.

Maniac Mansion

By: *Ron Gilbert and Gary Winnick*
Published By: *Lucasfilm (1987)* **Distributed by:** *Activision*
For: *Apple IIe, IIc (128K), also Commodore 64/128*
List Price: *$34.95*
Reviewed by: *Mike Markowitz*

Dave's girlfriend, Sandy the Cheerleader, has been abducted by Dr. Fred, a mad scientist who's planning to turn her brain into jello in his fiendish lab in the basement of that creepy old house on top of the hill. You're Dave, and you have to pick two college buddies to help you stage a midnight rescue and uncover the Terrible Secret of Maniac Mansion.

As you might expect from a product of the Lucasfilm game factory, *Maniac Mansion* has

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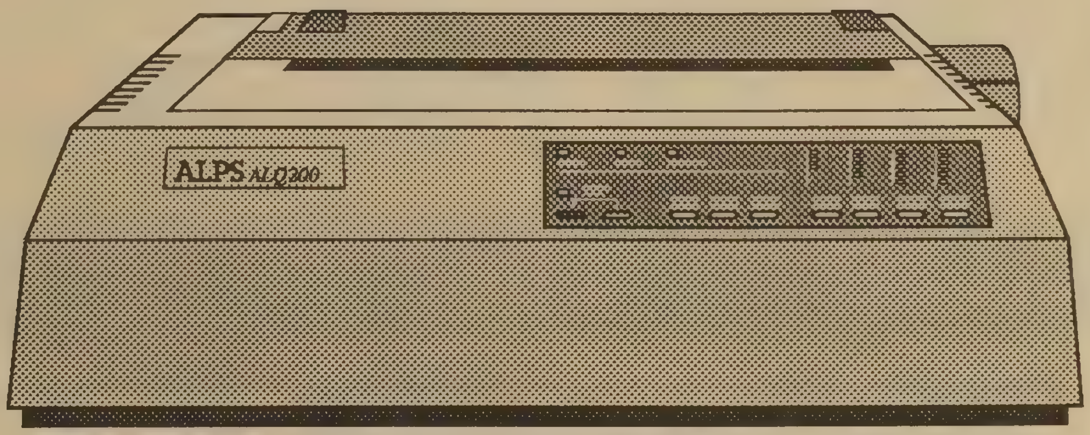

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some of the cleverest animation and special effects ever seen in the world of 8-bit microprocessors. The program manages something that has defeated more than one good programmer: using a joystick effectively as a mouse, to select options, move the players around, and even grope through darkened rooms. When you direct a character to move into an edge of the screen, the scene changes to show the next room, or the next part of your current room.

The game uses a limited vocabulary, with all the words displayed across the bottom of the screen: WALK TO, PUSH, PULL, GIVE, OPEN, CLOSE, READ, PICK UP, WHAT IS, UNLOCK, USE, TURN ON, TURN OFF, FIX. There is also a NEW KID command, used to switch control between your three characters, and an Inventory of the objects you've picked up.

Being moviemakers at heart, the folks at Lucasfilm Games have included "cut scenes"—short animated sequences that are "triggered" when you do certain things. These little flashbacks help to tell the story and give you hints about the game. Some fancy data compression techniques must have been used to get so much information onto a double-sided disk (the game prompts you when it's time to flip the disk over).

The mansion is BIG, with 55 "rooms" and over 450 objects. The puzzles are humorous and challenging, but not so difficult that a beginning adventure gamer would become frustrated (My idea of "too difficult" is getting the Babel fish into your ear aboard the Vogon ship in *Hitchhiker's Guide To The Galaxy* from InfoCom.)

We are assured that there are five possible solutions to the game, so it can be played repeatedly, with different characters, although the objects will always be in the same places. A game in progress can be saved to a DOS 3.3 formatter disk.

Maniac Mansion will run on the Apple IIGS, but you have to set the system speed to the "slow" setting, or else the joystick cursor will be almost impossible to control. My contact at Lucasfilm Games thought the program's colors looked bad on the analog RGB monitor, but when I plugged a composite color monitor into my IIGS, for a side-by-side comparison, there was hardly any detectable difference. It would have been nice if the designers had included a mouse option, but the vast majority of Apple II gamers are still mouseless.

Documentation is a minimal, which is altogether fitting and proper for a game where you are expected to figure things out for yourself. A fold-out poster included in the package recreates a bulletin board from the State University. A lot of hints are hidden among the jokes.

Maniac Mansion is something very rare in the world of computer adventure games—a treasure house of new ideas and programming techniques. In a period when so many games are dull repetitions of standard formulas, written in klutzy compiled BASIC for 48K of RAM, it is refreshing to see something so creative. (Activision, 2350 Bayshore Parkway, Mountain View, CA 94043. 415/960-0410.)

Street Sports Baseball, California Games

By: *EPYX*
For: *Commodore 64/128, IBM, Apple II, California Games also for Amiga and Apple IIGS*
List Price: *$39.95 all versions*
Reviewed by: *Sue Albert*

East is East and West is West in these two new games continuing the EPYX Games Series. These are charmers, not only because of the catchy music, well-articulated animation, and humor, but because even a bumble-finger at the joystick can rapidly catch on and improve enough to dream of winning. Both games acknowledge a universe where females not only exist, but are talented competitors.

Street Sports Baseball has two fields to play on a vacant lot and a parking lot. Both are authentic with can lid and tire bases, stumps, puddles, and car horns honking in the background. You choose teams, toss a coin, and play against a friend or the computer. The players, reminiscent of the street-smart "Dead End Kids," are the 52nd Street Gang, each with unique player attributes. Favorite teams can be saved to disk. The play is realistic, players bend down for the ball and slide into bases. The split screen helps you to get a bead on the ball for batting and fielding. In the Commodore 64/128 version, the manual incorrectly states that before completion of the game you may press run/stop-restore to start over, when actually you must reboot for a new game.

As a second generation native, I found *California Games* especially appealing with its catchy music and recognizable locals. Loved surfing despite the lurking shark, got a kick out of skateboarding the Half Pipe where I could almost feel the skinned elbows, impressed myself by doing snappy foot bag tricks and managed a few wheelies on my BMX bike, but I felt "totally" at home tossing the Frisbee under Half Dome in Yosemite. I enjoyed roller skating the Venice boardwalk, but occasionally I seemed to lose all my momentum. The manual covers the fine points of each sport. Events can be played against the computer or up to eight players can compete, Olympic style. *California Games* is endearing with unexpected humorous details like tempermental losers and even a cute little 'quake.

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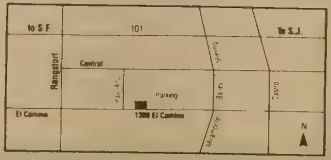

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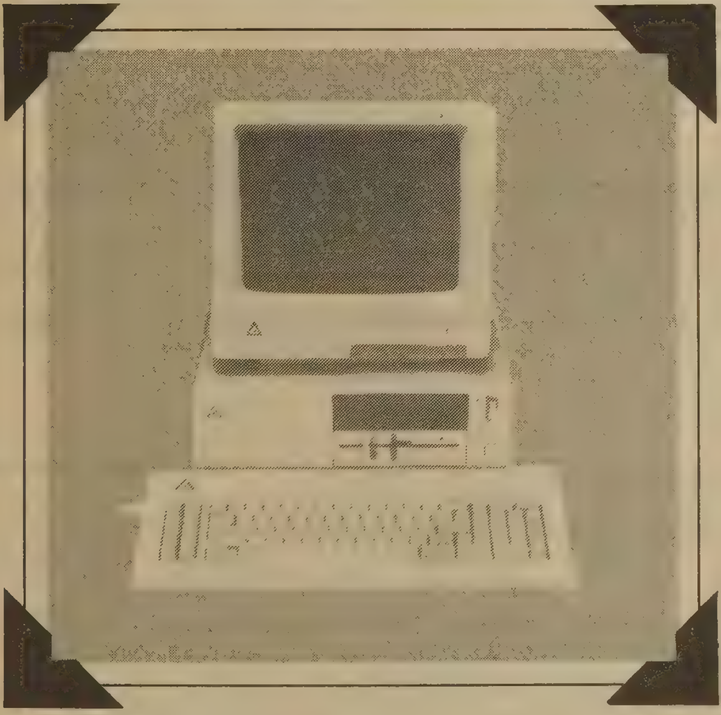

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Sea Strike

By: *Richard L. Seaborne and Jeff A. Lefferts*
For: *Apple IIGS (512K)*
Published by: *PBI Software (1987)*
Reviewed by: *Mike Markowitz*

Reflagged oil tankers are being attacked by mines, explosive-packed suicide speedboats, and low-flying missiles. U.S. helicopters fly desperate last-ditch intercept missions. Some don't return.

Tomorrow's headlines? No. It's *Sea Strike*, an arcade action game for the Apple IIGS.

Apple IIGS owners have had to wait almost a year for the first crop of arcade games that take advantage of the sound and graphics potential hidden inside their computer. *Sea Strike* even supports the MIDIdeas SuperSonic stereo card, although the explosions and voice warning are quite convincing in plain old monaural output.

Sea Strike makes no pretensions to realism; it is pure shoot 'em up fun. You use the mouse to move your chopper around a rather small window of Persian Gulf seascape, as your sitting-duck tankers crawl across the bottom of the screen. Mines, speedboats, missiles and other Mideast nautical curiosities drift in from the top of the screen. The mouse button fires your laser cannon. Like all good-guy weapons, this has an infinite supply of ammunition. The space bar activates your immolator, which briefly engulfs you in a sheet of flame, destroying anything you touch.

You get points for destroying things, especially Iranian F-14 reconnaisance planes. You get a bonus for every tanker that manages to cross the screen intact. There are several levels of difficulty, including an especially challenging night mission, where the screen is black, except for the flash of explosions, and the rocket's red glare. High scores can be memorialized on the game disk. There are four pages of documentation, which is about three pages more than you need to play the game.

Sea Strike is as good as any arcade game in your local pizza parlor. It costs a lot of quarters, but it comes in a nifty plastic case. Before you can play you have to figure out how to free the disk from behind a transparent plate without demolishing the entire box. The packaging concept needs to be reconsidered . . . (PBI Softwarre, 1163 Triton Drive, Foster City, CA 94404, [800] 572-2746.)

GRAPHICS

TopDraw

By: *Robert A. Hearn and Jeff G. Erickson*
For: *Apple IIGS (512K) one 3.5" drive required; ImageWriter and LaserWriter printers supported*
Published by: *StyleWare (1987)*
List Price: *$90*
Reviewed by: *Mike Markowitz*

TopDraw is the first object-oriented drawing program for the Apple IIGS. "Object-oriented" or structured graphics differ in several important ways from the "bit-mapped" graphics used in several new paint programs for the IIGS. StyleWare, the publisher, compares *TopDraw* to *MacDraw* on the Macintosh. *TopDraw's* programmers meticulously followed the Apple Human Interface guidelines: the pulldown menus, icon-based tools and dialog boxes will be comfortably familiar to most users. Most menu commands have an equivalent keyboard shortcut.

When you draw something in *TopDraw*, you are creating an object that retains its identity, no matter how you manipulate it. Objects can be selected, grouped, moved, stretched, squeezed, rotated, recolored, duplicated, and subjected to other indignities. A bit-mapped graphics program, in contrast, operates on pixels and groups of pixels. For example, once you use a tool to draw a circle, the program doesn't "remember" that this particular bunch of pixels is a circle.

There are only ten basic drawing tools in *TopDraw:* a pointer (which works something like the "hand" icon in other programs), a text tool, two straight line tools (one for horizontal/vertical lines, the other for lines at any angle) a box tool, a rounded rectangle tool, an oval (ellipse), an arc, a polygon tool and a freehand shape tool. When an object is selected with the pointer it is bracketed by "handles"—eight small black squares. You can reshape an object by dragging its handles.

There is a palette of 16 colors and 16 patterns, which may be edited or moved around the screen. Like all other IIGS graphics programs, *TopDraw* provides two different ways to mix colors by sliding indicators up and down on scale bars with the mouse: RGB (red, green, blue), and HSI (hue, saturation, intensity). *TopDraw* uses only the 320 by 200 screen resolution (the IIGS also has a higher resolution with fewer colors). The pencil and paintbucket icons are not drawing tools, they are indicators on the palette, showing the currently selected outline color and fill pattern. There is no airbrush tool, but I was able to get the same effect by creating a dot pattern, and using it to fill a circle with no border. A smooth polygon command allows you to round off the sharp edges of an angular object.

There are five line widths, and a unique tool that automatically draws arrowheads at either or both ends of a line. You can edit any line width. You can also change the corner radius for any rounded rectangle. *TopDraw* handles dimensions very neatly. In most paint programs, if you want a

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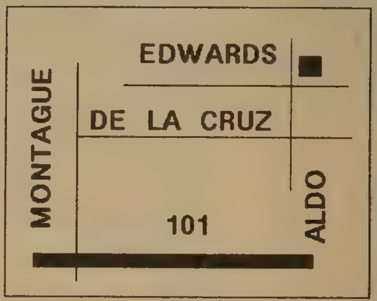

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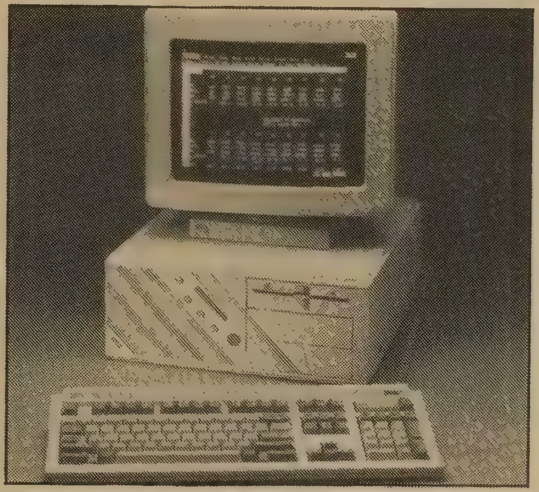

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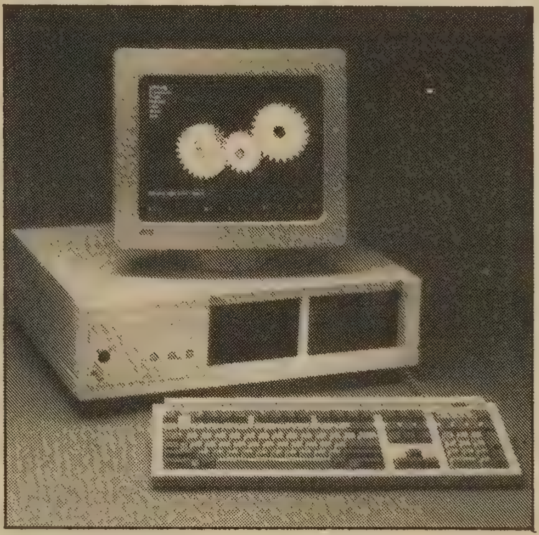

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On The Firing Line

Multi-User Systems

Based On The XENIX Operating System

By Stephan Wickham
and the Diamond Software Technical Team

Recently we have been doing some interesting work with the Santa Cruz Operation's (SCO) XENIX 386 System V Operating System (developed jointly by SCO and Microsoft). SCO produces all off-the-shelf XENIX products for the PC, while Microsoft sells only to OEMs — such as IBM. XENIX (UNIX) is today's high-performance industry standard multi-user operating system for microcomputers.

There is currently an explosion in applications, and with good reason. An SCO XENIX based 386 computer will offer a complete "true" multi-user system that will have better performance and better resource sharing, at a lower cost than most popular network solutions. Smart business managers are realizing that their employees don't have to work in single user isolation. A few years ago, we would have called this type of system a minicomputer, but today's definitions are based on price, rather than performance — so the powerful 386 systems end up being called micros. Rest assured that under the hood of your 386 system beats the heart of a tiger.

Currently Intel is in full production of 16 MHz and 20 MHz versions of the 80386 processor. My reliable sources at IBM and Intel say that there are a limited number of 24 MHz and 35 MHz 80386 microprocessors, and they work without problems. This could very well mean even more powerful 80386 based systems just down the turnpike.

Meanwhile, Advanced Micro Devices (AMD) has announced a 16 MHz 80286 and will most likely have a 20 MHz 80286 by sometime in 1988, even though Intel has no plans to make a faster version of the 80286 than their 12.5 MHz. As you read this, the Intel 80486 is in the beginning design stages and is expected to offer performance in the 32-40 MHz range with improved cache memory.

What this all means is that we finally are getting computers that can run high-performance operating systems and heavy-duty applications.

Compared to PC-DOS (MS-DOS), XENIX has two major strengths. It was conceived years ago by AT&T as a multi-user, multi-tasking operating system, while PC-DOS is still basically limited to a single user system. XENIX does not face the memory limit inherent in the current versions of PC-DOS. Even the coming IBM OS/2 operating system will not be multi-user in its full implementation, but rather a networked solution that will require a machine with 4-5 MB of RAM to run.

Also, OS/2 will start out with very little available applications software for 1 1/2 to 2 years after its introduction. Today there are thousands of packages that have been developed for XENIX. XENIX has more implementations on more different processors and computer architectures than any other operating system. Therefore, software developed for XENIX (UNIX) System V can be readily moved to machines from small personal computers to super mainframes.

Our journey down the high-performance XENIX 386 System V path started with a request from an import-export client for a multi-user system to run their documentation system. Our development started by installing SCO XENIX 386 System V on one of our new high-tech Wyse 386 PCs. By much experimentation in our lab, we were able to come up with a selection of equipment that is tailor-made for the 80386 32-bit environment.

Our number one lesson on XENIX 386 System V is quite clear: Hard disks, tape drives, printers and terminals work best if you use the built-in device drivers that come with the operating system, *not* the ones that are supplied by third party peripheral manufacturers. The key is to select your devices from internally supported hardware — otherwise you will bash your head against a wall for days trying to make your system work. If you follow our example, your system will be rock solid and more useful than Aladdin's Lamp.

We discovered an excellent connection system with CTC's eight serial port card and box, which allows us to plug in terminals and serial printers. The setup is very solid and allowed us to connect all the peripherals very easily. It is supported internally by SCO XENIX 386 System V and has given us no problems. We were impressed at being able to expand the system to even more ports in the future. For hard disks we are currently using 40 and 70 MB drives from Micropolis, which offer a fast 28 ms access time and good quality.

The most difficult hardware to build into the XENIX computer system was the tape drive. We found that third parties' software did not work correctly with our operating system, despite claims by various manufacturers that their software and tape drives were currently working in such systems. Unfortunately this was so much hogwash. We have discovered that the raw Tecmar QIC-60 internal tape backups work quite nicely and follows our rule of using devices that are supported internally by XENIX. One of the Archive tape backups, and some tape backups from a number of companies like ITT which relabel Tecmar or Archive tape devices, work well also.

Printer and terminal support is quite extensive within XENIX. Our terminal preference is the Wyse 60 which is available with five different keyboards. The best keyboard to use for XENIX applications is the Wyse 60 ASCII keyboard. This keyboard will save you from having to have your function keys remapped for all your applications. Wyse terminals are built to human-engineered (ergonomic) standards and are the best in terms of design and value.

We were also able to add color support to XENIX, and were quite pleased with the ability to be able to add user specified color choices for the foreground, background and cursor in all XENIX applications. Our standard XENIX system now includes a color main console, which we feel adds a nice touch for multi-user system control.

We are able to support most printers commonly used by corporations, though we recommend that you purchase OTC, ALPS, Epson, Hewlett-Packard or Texas Instruments. Our XENIX systems offer queued multi-printer support. Users can easily pick their printer of choice from their application menus. The system will take care of the rest. Printers can be mixed or matched.

From a technical perspective, the operating system is very difficult, but extremely powerful. You, the user, are, for the most part, insulated from the complexities of the operating system by easy-to-use front end menu systems built into the operating system and your applications. The difficulty is in the installation and configuration of XENIX, and not the day-to-day operation of XENIX and applications that run under it.

We do the work. When Diamond Technical builds a multi-user system we program the operating system to automatically take the system operator to the opening menu after inputting their login password. From this menu there are other submenus that provide different system functions. XENIX has built-in password protection, and each user must login on their terminal. Our XENIX system automatically takes each user into their own unique opening menu; regular users on the system are not able to implement functions that affect the whole system — such as system reconfiguration, or the deletion of another users file. They may not even read another user''s file, unless that user has provided them permission.

No wonder the US Government is using billions of dollars of XENIX-UNIX computers. XENIX systems are also in use in large and small universities all over the world, because they are powerful and maintain control of the system, peripherals and users' demands for resources. In short, after a XENIX system is ramped up by the technicians, it is almost bullet-proof.

It is a fact that most business users are in need of a word processor, a spreadsheet, a database and a graphics program — pretty much in that order. We are able to offer true multi-user applications that appear the same as common PC-DOS business applications. We have Fox Software's *FoxBASE Plus,* which was the subject of an earlier "On the Firing Line" article. It is a *dBASE III Plus* clone that offers higher performance. We also have the *SCO Professional,* which is a very powerful *Lotus 1-2-3* clone for XENIX multi-user environments. It can even read *1-2-3* files from your PC disks. The user interface looks the same, so your users will have no trouble using *SCO Professional.* We have very full featured word processing systems like *Lyrix* from SCO, *R Word* from R Systems and *Crystal Writer Plus* from Syntactics. We have proven applications in a number of other areas. Call Diamond Technical for more information. A typical five user, two printer system, with a 70 MB hard disk, a 60 MB tape backup, color main console, one multi-user application and XENIX 386 is less than $12,000. This is very price competitive on a per user basis with single user PC-DOS systems, while offering you greater control over your data.

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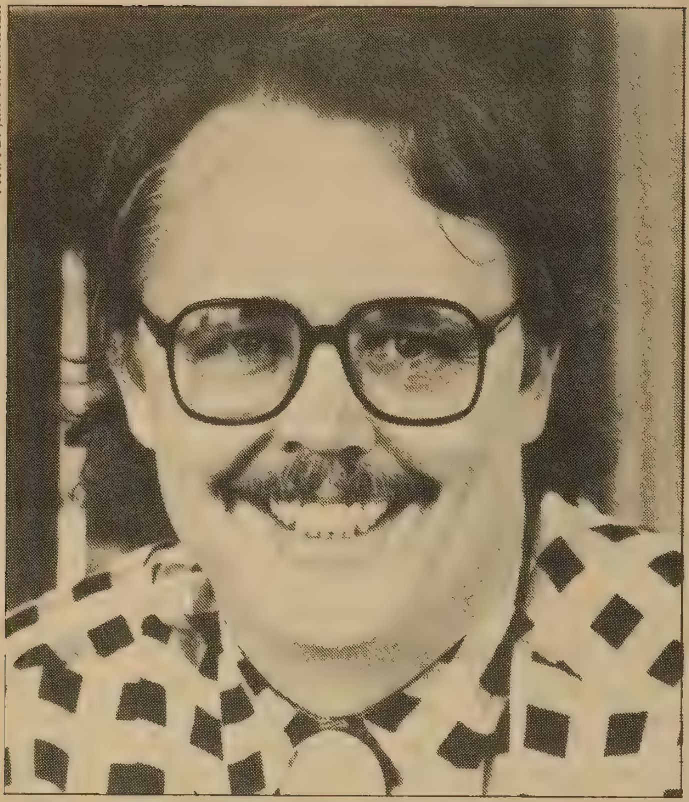

Personal Computers And The Big Picture

PCW's David Bunnell on technology, the industry, and society

By Mary Eisenhart

David Bunnell got his introduction to the publishing world in high school, where he earned his first dollar as the sports editor of the Alliance, Nebraska *Daily Times Herald*, of which his father was managing editor. He got into social activism shortly thereafter, where as a member of SDS he organized the biggest demonstration in the history of the University of Nebraska in a successful attempt to persuade the University to include an anti-discrimination provision in its off-campus housing policy. He met the personal computer when, after being involved in the Wounded Knee uprising and having his car fired upon, he moved his family to the more tranquil environs of New Mexico and took a job at a startup called MITS in time to witness the advent of the Altair.

Today, at 40, Bunnell presides over one of the most successful publishing empires in the computer industry. He's displayed an uncanny knack for understanding industry trends before they become readily apparent and founding magazines in support of them, including *Personal Computing* and *PC*. His current company, PCW Communications, is part of international publishing giant IDG and includes such popular and well-regarded magazines as *Macworld*, *PC World*, and *Publish!*

He continues to seek out and support what he considers new opportunities in the marketplace — most recently he's added two publications, the biweekly tabloid *Macintosh Today* (scheduled for weekly publication in 1988) and the monthly *Windows*, due next year. He recently organized a conference called Campus Computing '88 to acquaint vendors with what he considers the burgeoning and neglected university computing market. And *PC World* is about to begin publishing a Moscow-based edition.

It hasn't all been smooth sailing. He parted company with *Personal Computing* over creative issues early on, and he's currently embroiled in litigation with Ziff-Davis, to whom his investor secretly sold *PC* back in 1982. At the time, his reaction was to gather the aggrieved staffers, strike a deal with CW Communications (now also part of IDG) for a new magazine giving himself and key personnel part ownership, and put together the first hefty issue of *PC World* in record time. According to various published accounts, Ziff maintains that Bunnell violated his contract with *PC* in setting up the rival *PC World*; Bunnell has contended that the sale itself was a violation of an agreement giving 45% ownership of *PC* to himself and other key personnel. With the suit in progress, he declines to discuss it ("next interview, hopefully" he suggests) — as does a spokesperson for the legal department of Ziff-Davis.

He also continues to be no stranger to controversy, speaking out in his *Macworld*/*PC World* columns in damn-the-torpedoes fashion when the need arises. His November 1986 column, for instance, took on the Georgia anti-sodomy law in response to blandishments from the state's governor urging him to support local high-tech industry.

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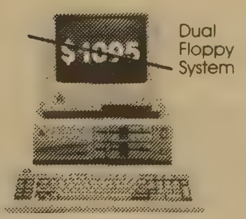

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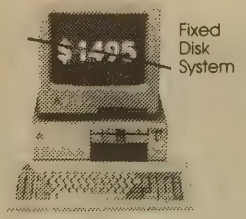

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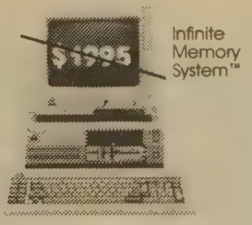

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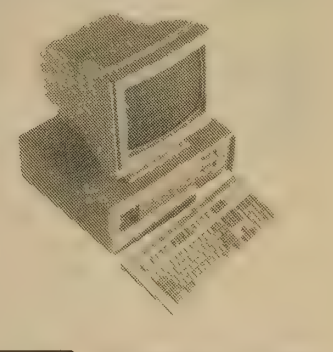

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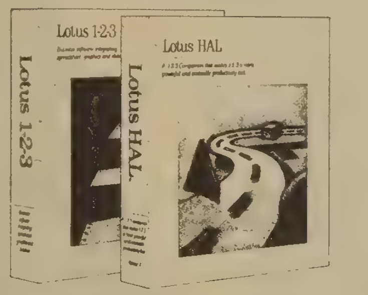

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"You may well ask," Bunnell wrote, "what does a law against sodomy have to do with personal computers and high technology? The answer is that the law conflicts with the very vision that compelled the growth of personal computers.

"The original vision of the personal computer world was based on the principle of a progressive, laissez-faire capitalist society. One that allowed for more personal expression and gave people greater decision-making power. A society where people were judged by their contributions and not their lifestyles.

"Therefore, I feel that the personal computer world should think twice about supporting high-tech development in states that lack a decent social climate for high-tech to operate in."

Hate mail was his daily diet for months.

> ***"We should be concerned with the statistics that show that boys are three times as likely as girls to use computers, because if that continues the personal computer is only serving to widen the gender gap. I'd like to see the personal computer narrow the gender gap, as well as the gap between the rich and the poor."***

More recently, he's published a column calling for improved ethical standards in computer journalism, issuing stinging denunciations of practices such as reviewers employed by the product's vendor, writers who steal equipment, and advertising departments that attempt to influence a publication's editorial content. "I hope that over time our image improves," he says now, "and that we're seen as being as respectable, if not more respectable than, people who would work for the *Wall Street Journal* or the *New York Times*. There's no reason that we have to be shoehorned into some category that we're not real journalists, that we're sort of less than genuine professional journalists."

In the face of his considerable success and prosperity, he's maintained a commitment to his social-activist roots, and would rather talk about the big world than technical issues. "I don't have the same exact viewpoints I did then," he says. "I've evolved, but I care a great deal about justice.

"With me, a big issue is the disenfranchisement of large segments of our society. I feel that everyone should participate in the decision-making that affects his or her life. The greater degree of citizen participation, the better.

"But along with that we have to have really good education, so people can make intelligent decisions. So currently, while I'm not concerned anymore so much about ROTC on campus, I'm concerned about the illiteracy rate — 25% of adults in America are illiterate, which means that they can't read at a fifth-grade level. How can you have a really vibrant democracy with true participation unless people can really read and understand and relate and have a cultural literacy as well as the ability to read?

"It seems to me that our country is moving towards disenfranchising more people — I think we made a lot of progress in the late '60s and through the '70s, but it seems like, with the Reagan administration, we've taken steps backwards, and the gap between the haves and the have-nots is broadening. The middle class, I think, is shrinking, and there are more rich people and a lot more poor people. That's not the kind of country I think we want to evolve to, where the country's run by the wealthy who are a small minority, and then the vast majority of people are poor. That makes us evolve to be like some European countries, and I think that that would be very dangerous, and not a good thing."

What's Bunnell doing with Dr. Ruth? They were both honored this year by the Fund for Human Dignity, she as Educator of the Year, he as the recipient of the Howard J. Brown Memorial Award for his editorial criticizing Georgia's anti-sodomy law.

What role do you see computers playing in society, good or bad?

Computers largely have a potential role versus an inherent role. There's nothing inherent in the personal computer that means that it's going to be a positive force in our culture and our society, but there's a potential.

The personal computer can be a very powerful organizing tool. It can be a tool for communications, particularly online communications, where people of like views can get together and organize and find each other. For example, if you're concerned about saving the whales, you can get online and find a lot of other people that are interested in that, and maybe you can find groups that are interested in it, and have instant access and communication with them. It's a terrific organizing tool, where people who might feel otherwise isolated can find that there are people that think similarly to them, and people who are willing to listen to their views and be persuaded. So the ability of

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online computing to enhance democracy — the potential is there, and could be very significant.

But computers can be used as an abusive tool, also — one classic example is the word processing pool where the computer keeps track of your keystrokes per hour and your number of mistakes, or the office networks where messages could be monitored and people's mail could be read. We have to keep in mind that all technologies have a bright side and a dark side, and if you want the personal computer to have a real good impact on society you have to actively make it happen.

We have to actively *apply* the personal computer in positive ways, and we have to look at what's happening with personal computers and blow the whistle when they're being used in abusive ways. If we just say, well, there's something inherently good about it, I'm afraid that we'll be disillusioned and it won't really happen.

> ***"Dave Hughes in Colorado Springs has a bulletin board where people debate Star Wars and other issues. I think he's an American hero, and we ought to follow his example. I'd like to see a lot more of that. I'd like to get onto CompuServe and see a lot more political debate and a lot less tech talk."***

What kinds of things would you like to see happening with personal computers that aren't?

(Laughs) I'd like to see several things.

I'd like to see government and industry work together to make sure that personal computers are more available to schools, and to minority groups, and to poor students, and impoverished communities — that they have access to personal computers and that we don't allow the personal computer to just increase the gap between the haves and the have-nots. I think that Apple, particularly, has done a really good job of sort of setting an example, and I'd like to encourage them to do even more. IBM has done some very good things — their *Writing To Read* program was a really excellent example.

But really, these things are small potatoes when you look at them in scope of the size of the problem. We need to do much, much more, and I'd like to see a lot of other companies get involved in these kinds of projects, and I'd like to see the industry as a whole do more to lobby government to provide tax incentives and to provide money for putting more computers in schools in urban areas and the ghettos and making computer technology more accessible to a broader number of people.

Another thing that I've mentioned before and was sort of controversial because it's misunderstood, but I'll mention it in this interview...(laughs) I'd like to see a conscious effort to create what I call software for girls. (laughs) And when I say that, I don't mean software that is...

Barbie software?

...Barbie software or software that has to do with doll-playing; what I'm talking about is software that isn't male-biased. An example is typing tutor programs where you learn how to type by doing shoot-'em-up games. It seems to me that a lot of software is really male-biased, and the games that kids play, particularly educational software, are largely targeted at boys. It's largely written by older boys (laughs) for younger boys.

I think we should be concerned with the statistics that show that boys are three times as likely as girls to use computers, and that they're much more involved in computers, because if that continues the personal computer is only serving to widen the gender gap, and I'd like to see the personal computer narrow the gender gap as well as the gap between the rich and the poor.

I'd like to see the industry itself take more steps to insure that it is a diverse industry. It concerns me a great deal to see so few black faces at COMDEX, for example, and to see that the personal computer industry is largely a white-male-dominated industry. I think we're behind the legal profession, the banking profession — there are other professions where women and minorities play a much greater role than they do in the computer industry, and I think that we as an industry ought to be very concerned about that and make sure that our industry is more representative of the broader culture. I think we'll reap a lot of benefits from that. It's in our self-interest, it's not a matter of just me being altruistic or whatever.

I'd like to see activists be more involved in online computing. I know that there is some of that going on — there's Dave Hughes in Colorado Springs who has a bulletin board where people debate Star Wars and other issues. I think he's an American hero, and we ought to follow his example. I'd like to see a lot, lot more of that. I'd like to get onto CompuServe and see a lot more political debate and a lot less tech talk.

It seems that one of the problems with personal computers is that they're so engaging that people who are involved with personal computers just *talk* about personal computers. And they forget about the other issues of society. And you can't bury your head into sort of a technical nerdy sand or beach — you can't just be concerned about that technology and ignore the rest of the world.

The rest of the world in fact is much more important than the workings of a personal computer, and that's where I kind of see that the personal computer becomes negative. At the point where you draw the line between being concerned with getting your job done, making society better, communicating better, being more productive; where you go over the line to being concerned about the technology, and how responsive it is, and how much you know about the technology, and being concerned about that, is where the negative side is. It's even at a point in some businesses where tasks that lend themselves to the personal computer tend to become a priority, and the business's tasks that are less amenable to being computerized become less important.

I think that's a real danger, to let the personal computer sort of decide what's important and what's not on the basis of how easy it is to apply the personal computer to the problem.

At the Hackers Conference, Todd Rundgren said, "Nobody's written a line of code yet that produced a Mother Teresa."

I think that's true. How good of a human being you are is far more important than how good of a programmer you are.

Within that context, what do you see as the proper role of computer journalism?

(Laughs) I think the proper role is to be a user advocate. It's really important that computer journalists put themselves in the shoes of the users, and our orientation [at PCW] is that what's good for personal computer users is what's good for personal computing and what's good for the magazines. I think it's real important that we be reader/user advocates, number one.

Secondly, I think that we are in a position to really examine the impact of new technologies, and we need to not just be cheerleaders for every new thing that comes along and sort of encourage people to buy, buy, buy. Instead, we need to be the ones who find out first whether a new technology really is useful, and really is worthwhile. We should report on that to our readers, and we should also be concerned about how do people get more out of the existing products they have.

Everybody does not need a 386 machine or a Mac II. We should be helping people get more out of their old PCs or 128 or 512K Macs, and there's a lot of good technology out there, millions of machines, even old CP/M machines that have a lot of usefulness in them. I think our magazines as well as other magazines should also focus on how you get more use out of the old machines as well as the exciting new machines.

I think that we need to make sure that we have good ethics. There's been examples of poor ethics along with the good — we have to make sure that we're not being biased in any way. You need to be straight with the readers, be honest.

We have to be good journalists and we have to be good technologists, and that's sort of a very tricky combination — to be really good at personal computing technology and also be good writers and good editors. But I think there are a lot of good people in that category throughout computer journalism, and I think that while we have our failings, I believe that by and large we've gotten a bum rap, and that most of the writers, and editors and reporters that I know on all the publications throughout the industry have a tremendous amount of integrity, and they care a great deal about the work that they're doing, and they care about the readers and the users. It's just a few rotten apples that are giving us a bad name. And

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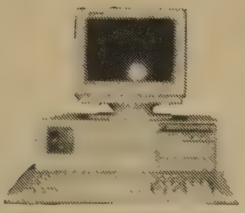

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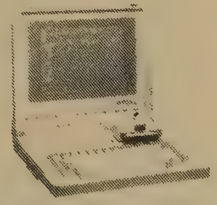

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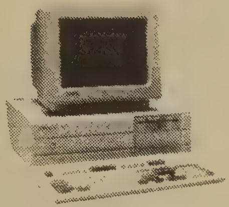

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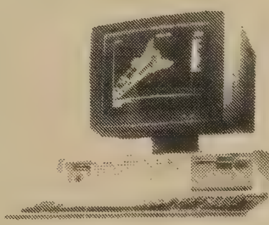

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COMPUTOWN

a few opportunistic publishers who have spoiled it for us.

How did you come to write the Atlanta column?

Well, in the first place I thought it was really outrageous when the Supreme Court ruled to uphold the constitutionality of the Georgia [anti-sodomy] law, because I clearly think that the Georgia law is a gross violation of privacy. And one thing about it that few people seem to appreciate is that it impacts everybody [because of the law's wording]. I did an informal poll around the building and our office, among both straight and gay people, and I was not able to find a single person who has not at one point in their life been guilty of sodomy according to the Georgia statute. (laughs) And so it's something that threatens all of us.

Also, I think the right to privacy is a real key issue in the development of the personal computer, because the personal computer has the potential to abuse privacy. I see that as absolutely a cornerstone of our democracy, and so I found that [law] very outrageous and had been thinking about it in the back of my mind.

What really triggered the column was a letter from Governor Harris, inviting me to take a technology tour of the computer companies in the Atlanta area, with the hopes that I would go back and write glowing reports about how great the Atlanta area is for technology. Which it is, in many ways. But I find it kind of revolting to think that technology which has the potential to liberate people is being developed in an area where they have laws that are very discriminatory and very, I think frankly, un-American.

And so I wrote back to him a simple letter and said that I would not attend his technology tour, I would decline to do so, and would not do so in the future until he assured me that he was actively working to reverse Georgia's sodomy law. And he, or someone in his office, Xeroxed the letter, and sent it around to some of the CEOs of some of the companies in the Atlanta area. People from those companies called our office and started to complain about the letter I wrote.

I thought that was really kind of a low tactic on the part of the governor. Because it was a private letter, and he never responded to my letter. He never wrote back to me, he never called me up, he never talked to me about it. He didn't say boo, but he passed the letter around. So I decided to take it public, by writing a column about it. I felt very strongly about it, so I wrote the column.

It created this amazing reaction. I knew it was very controversial, and I knew that some companies in the Atlanta and Georgia areas would be angry with me. I anticipated that, but I didn't anticipate the volume of the reaction, where I got somewhere in the neighborhood of 5,000 letters. Which is more letters than I've gotten for all my other columns put together — and I've gotten a few letters, because I *have* written a few controversial columns.

In the beginning the letters ran about four to one against me. I received several categories of letters. One was that I was abusing my position as editor in chief and writing about a topic that wasn't germane to the personal computer business, which I thought was a legitimate issue to raise. I could debate that — I don't agree with that, but I thought that was an okay argument.

But then I got letters from people who said that the Constitution of the United States is based on the Bible, and that the Bible forbids sodomy, and therefore the law in Georgia is okay. These letters were the ones that concerned me absolutely the most, because they portrayed a great deal of ignorance, and I wasn't aware that so many people were so ignorant about the American Constitution. I found that appalling and frightening.

> ***"You can't bury your head into sort of a technical nerdy sand or beach — you can't just be concerned about that technology and ignore the rest of the world. The rest of the world in fact is much more important than the workings of a personal computer."***

The third category of letters that were against me were letters that were just — what do you say — hate mail, where people would scrawl "faggot" and write incredibly nasty letters. One letter I got from a guy was so nasty — and he wrote it on his company letterhead — that I Xeroxed it and sent it back to the president of his company. I said, "I thought maybe you'd like to know about how one of your employees is representing you..." (laughs) I never heard again from that.

I did receive a few letters in the beginning that were supportive of me, and over time it seemed like it became more and more balanced, so that maybe by the last couple weeks of receiving letters, about half of them were favorable. I heard from gay rights groups all around the country, I heard from gays in Atlanta.

The most moving experience I had was, I was at a trade show in Dallas, and an elderly man came up to me, his eyes were moist, and he thanked me for the column and said that his son was a gay programmer, and he really appreciated what I'd done. I was very moved by that. I was invited to speak at a couple of gay rights groups, and then I was awarded the Howard J. Brown award, which I shared with Dr. Ruth.

I was really moved by that, and I'm glad I did it. We did lose a few pages of advertising; all the advertisers but one or two, maybe, have come back.

It was worth it. It was worth it because we said "We care about things beyond just the nuts and bolts of computing. We have a bigger perspective, and we're a bigger magazine than just a personal computer magazine. We're a part of the community, the environment, and we care about that environment, and it's important to us."

Also, I think that computer journalists don't just have to write about code. We are human beings, and we can write about the impact that personal computers have in our society, and be concerned about that too. In the long run I think it was a real healthy thing — it really raised the standards, the level of what we can write about as computer journalists. Because I wrote that column , I think other journalists are writing other columns — not on that topic, but they're taking more chances. I sort of pushed the envelope out, and I hope that that is a positive thing.

What effects do you expect to see from PC World's Moscow edition?

We're talking about the computer and democracy, and I think it's really going to be interesting to see what happens — the impact the personal computer is going to have in the Soviet Union.

Can civilians have computers in the Soviet Union?

Gorbachev has said that they're going to have 300,000 personal computers in the Soviet Union over the next two years. I imagine that most of those personal computers are going to be purchased by schools and institutions, so whether individuals can buy them or not, I'm not sure yet.

But I think individuals will lust after them to the point where if they can't buy them they'll acquire them, either through the black market or they'll be able to put enough pressure on their government to eventually start acquiring them. I hope so, and I'd like to see what happens with the impact of that.

We are going to be publishing *PC World* in the Soviet Union beginning next spring. It's an independent operation, where they will largely create their own editorial and their own publication in a joint venture with our parent company, IDG. It's the first time that an American magazine has been published in the Soviet Union, and I think it's a very interesting experiment. I'm supportive of it, because I think that if we could have a lot more ties with the Soviet Union, business ties particularly, but cultural ties as well, it not only increases understanding, it increases this incredible entanglement of mutual interests, where we wouldn't dare want to go to war with each other because it would be bad for business. It's kind of funny, but I think it's true, that the more American companies do business in the Soviet Union, the more Soviet companies do business here, the more exchange of trade and people and ideas — it just seems to me that it creates a climate where we have to learn how to get along better in a political sense.

I say that, but I want to be really clear that I'm not one of these naive left-wing people (laughs) that thinks that the Soviet Union is a good society, and that they have good intentions, and that they can be trusted, 'cause I don't think that at all. I think that history has shown that they *can't* be trusted very much, and that we have to be very careful.

I'm not in favor of just saying, Gorbachev's a great guy and everything's going to be great, because we never know. The recent disappearance of Gorbachev, where he was out of public view for six weeks, was really scary, because it points out there are a lot of reactionary elements in Soviet society that would probably like to do away with him and go back to the old Stalinist days. Stalin was a monster and one of the biggest mass-murderers of all time.

I'd like to see them get out of Afghanistan and stuff like that too. But I'm really hopeful that things are going to improve, and I hope that in a little,

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sort of small way, *PC World* plays a part there. And then in a bigger way, that maybe the personal computer will be a factor too, and help open up the society.

I'm a little skeptical — it goes back to what I said that I don't think there's anything inherent in the technology that will set us free. Personal computers have the potential to do that, and it just depends on the people using them. There are a lot of questions, it's kind of early to tell, but I don't know whether those 300,000 personal computers that Gorbachev talks about are going to have *modems*. I don't know whether people are going to have access to printers. I hope they do.

It's hard to tell — I think the VCR has had a tremendous impact in the Soviet Union and in Poland and in other repressive societies, because it's very easy for people to make homemade tapes of meetings and speeches and things like that, and then pass them around so people can view them in the privacy of their homes. The personal computer has a lot of potential to open up society and empower individuals, and we'll have to see — I think we're putting it to the test.

You've started new magazines in the recent past. What needs do you see them filling?

Macintosh Today, our most recent launch, is specifically targeted at people who are responsible for multiple Macintoshes. People in medium-sized companies and large companies and organizations, including universities, who have responsibility for six or more machines. They are people that typically need to be current with what is happening in the marketplace, so it's designed to be a weekly tabloid news vehicle. It closes on Friday and it's on people's desk on Monday, so they know what is happening up to the minute and can make the wisest decisions, about not only purchases, but about implementation of technology.

When people have large budget responsibility, they have a need for that kind of immediacy. Which is unlike *Macworld*, which appeals to a much broader audience, where people don't necessarily need weekly updates, but they need in-depth product reviews and a lot of how-to hands-on articles that show them how to get through the...(laughs)

The not-so-intuitive interface...?

The not-so-intuitive, increasingly complicated, (laughs) Macintosh computing. Macintosh started out to be easy, but it's increasingly become more complicated as it's become more powerful and diverse.

Windows is a publication that comes out next year, targeted at graphic workstations, particularly 386 machines, running *Windows 386* software. We see the graphic workstation market as being an exploding market.

It's technical, it covers publishing and CAD/CAM, engineering, and advanced applications where you need multitasking, and is a power-user's magazine. It's a magazine for the technically astute and very sophisticated users who have grown beyond the more general magazines like *PC* and *PC World*.

Do you expect its scope to be restricted pretty much to Microsoft Windows, or other windowing environments?

Initially it's focusing almost exclusively on Microsoft *Windows*, but it's not ignoring the other windowing environments. As those environments become important, we will examine them as well as the Microsoft *Windows*. "Windows" is a metaphor for a style and method of computing — graphics-based workstation computing.

> ***"Because Apple isn't willing to share its technology, or license it to other manufacturers, they may find that their installed base is proportionally so small to the rest of the world that it's no wonder that they see connectivity as the key to their strategy."***

Do you see branching into things like Sun workstations?

That's a possibility. I can't say for certain how or when that's going to happen, but we're certainly fascinated by what's going on with Sun, and see Sun as a major player in the future.

Do you see UNIX as a major player in the future?

I think there's hope yet for UNIX. I mean, I was one of the early critics of UNIX, and I think rightly so, but there's been a lot of development of UNIX programs in university environments and in technical environments.

I tend to agree with Steve Jobs' analysis that UNIX has about two more years of life in it, and if during those two years somebody — I presume he's speaking of NeXT or somebody like NeXT — comes up with a really good windowing interface that makes UNIX really accessible to a broader group of people, and usable, then UNIX will survive and actually thrive, because it's a very powerful operating system.

That's the key, though, providing the accessibility to it. He [Jobs] must be working on it or he wouldn't be talking about it, and other people are also working on those kinds of interfaces, which could be the salvation of UNIX. But it better happen pretty soon, because the number of MS-DOS machines is overwhelming. And MS-DOS is becoming more powerful.

[Sun Microsystems'] Bill Joy gave a talk the other day that lumped UNIX and OS/2, both open systems, in the Vanguard of the Future category, and said unkind things about proprietary systems like Macintosh and [DEC's] VMS. Did Apple make the right decision in keeping the Mac interface proprietary, instead of opting for standards and open architecture?

It's really interesting, because there are two sides to that, and one side keeps playing off the other. It seems that Apple's becoming more open, IBM's becoming more closed. And Sun is the one company that has the truly open philosophy.

I think that if I were Apple I would be worried about the size of the installed base of the Macintosh. Everyone right now is very positive about Apple, and there's lots of reasons to be very positive about Apple. But the size of the Mac installed base is really pretty small compared to the MS-DOS installed base, and the MS-DOS installed base is growing at a much faster rate.

The reason is that the MS-DOS machines are open and the IBM machines are cloned, so the operating system is transportable among all those machines. I think that I would have like to have seen Apple at least license Macintosh technology to other manufacturers to make low-cost Macs. You see how Tandy, for example, is really serving what I think is a real positive role in making personal computers more accessible to a wider number of people by creating low-cost yet high-quality MS-DOS machines.

Why couldn't Apple license their technology to Tandy or to somebody like that who could create a low-cost Macintosh clone? I think that could only benefit Apple, because there would be more machines out there to run Macintosh software on. It would stimulate more software.

Because Apple isn't willing to share its technology, or license it to other manufacturers, they may find that their installed base is proportionally so small to the rest of the world that it's no wonder that they see connectivity as the key to their strategy. I think that the connectivity between the Mac and the IBM is, at this point, largely theoretical — it's not very real yet.

It's a real problem for Apple in the long run — they absolutely have to integrate the Macintosh with IBM's standard computers in a way that both of those machines can live in an office environment and both of them can be on the same workgroup-type networks, and they can exchange files and programs.

It seems to me that personal computing is evolving to the point where many personal computers will run several operating systems. It seems likely that you'll have 386 machines that will run UNIX and MS-DOS — we already have that, in some cases — and it would be great to have Mac programs, IBM programs, and UNIX programs. Why shouldn't the user have the accessibility to all those programs through one machine — why should you have to buy three machines? I see that as the one kind of long-range problem that Apple may have — that it may find itself, in spite of its

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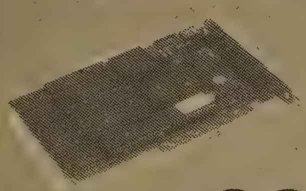

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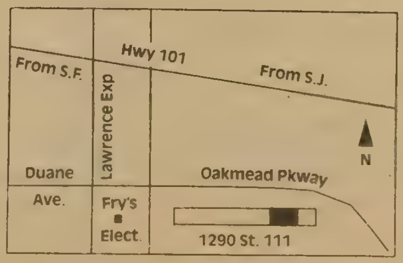

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success, increasingly isolated in the business world of computing.

I worry about that. I hope they worry about it too. (laughs)

I know Sculley was quoted as saying that the power-users were the ones that were financing the growth of the personal computer industry, and he indicated that he wasn't concerned about the low end of the market, that he considered the Mac Plus and the Mac SE as being the low-cost Macintoshes. And looking at that, compared to low-cost MS-DOS machines, is kind of frightening to me, because I don't see how Apple Macintosh can be really competitive in small business and schools, in the same way that MS-DOS machines can be competitive.

I'm suspicious that they're still, after all these years, protecting the Apple II market by keeping Mac prices artificially high. I've made this charge before, and they deny it, but I think there's a lot of reason to suspect that that still is the case, and I believe that that could be their flaw that could come back to haunt them in the future.

That, and the other challenge that Apple has is whether or not they're going to be successful in creating a generation of computers beyond the Macintosh, which they'll have to face someday.

What do you think of HyperCard and hypermedia?

I'm a big fan of hypermedia. I think that is the key to helping us deal with the information glut.

I think there are some very exciting things about *HyperCard*. When you extend the personal computer's programming capability to where the ordinary person can program and control the computer and create applications unique to their needs, I think that is extremely good.

I think, though, that what we're going to see over the next couple of months is a lot of criticism about *HyperCard* and the way it was implemented. In other words, I don't think it's as easy as Apple would like you to think it is. I think it's complex still, I think that it's not implemented as well as it could have been, and it has some revisions to go through and some add-ons that it needs before it truly fulfills the vision. I think looking at the whole world in terms of cards is one of its limits. So certainly there's hype there, but the idea that you can begin to program the computer yourself is very exciting.

And secondly, it takes the computer beyond being a mere productivity tool — we're starting to see the computer used as a container and orgainizer of information. When you talk to people who've never used a personal computer before, and you say, "if you had a personal computer, what would you do with it?" — a lot of times, almost always, in my experience, they say "Well, I would put this information inside of it, and I would keep track of this information and I would use the personal computer to organize my life and my information."

And then in fact if you look at what people do with personal computers, it's nothing like that. What I like about *HyperCard* is that it sort of fulfills that vision of what people would do with a personal computer if they had one, who don't have one and don't understand it yet. So I'm hopeful that it will develop into a real powerful tool that's widely used.

Owl's Guide avoids the problem of the card metaphor.

Guide avoids that. It does fall into some pits of its own. The thing about *HyperCard* is that everybody's going to have it, but it's kind of a shame that Alan Boyd and the people at Owl Software didn't get the kind of support for *Guide* that we see for *HyperCard*.

> ***"If people don't buy Toshiba laptops because of what they did, I think they got what they deserved. But if the United States government passes the embargo, and then Apple can't get the parts it needs to sell ImageWriters, then that's really a shame, because that's really hurting Apple and it's hurting users."***

There's another product called *Zoomracks* for the PC that's very similar to *HyperCard*. I wish that some of these little guys that aren't connected to big computer companies could have a bigger presence, and could find an easier avenue for their software. I don't think we've heard the last from *Zoomracks*, or *Guide*, and I don't think we've heard the last from other kinds of hypermedia products. I think it's a very exciting category — it gets really interesting when you add CD-ROM and other optical memory products to it.

What do you think of the Toshiba scandal?

Well, I don't like what Toshiba did, so I don't have any sympathy for them. If people don't buy their products because of what they did, they get what they deserve, basically. But it was one division of Toshiba, and the people responsible have been fired, and I think someone went to jail, and I don't think they'll ever do it again. But I think it was a shame, and they made a big mistake.

I'm not really in favor of the government making some embargo against Toshiba products, because I think they're going to be punished by the marketplace. We're publishing some letters from users about Toshiba, and I'm sure it's having a big impact on them.

What impact do you see it having on people like Apple, who are very dependent on Toshiba for ImageWriters?

I hope it doesn't have a bad impact on Apple. When you say that, you're pointing out that a lot of these things are a lot more complex than they appear to be on the surface. If people don't buy Toshiba laptops because of what they did, I think they got what they deserved. But if the United States government passes the embargo and then Apple can't get the parts it needs to sell ImageWriters, then that's really a shame, because that's really hurting Apple and it's hurting people, the users of Macintoshes.

If they were ever to do anything like that again, I might support a government boycott, but not at this point. The negative press they've gotten has to be enormously damaging to their business, and they deserve it. But I like the idea that the marketplace rules, that you get rewarded or punished by the marketplace, that it's not government regulations that interfere and make the rules of the game — it's the consumers and the producers.

You recently had a conference on campus computing, which seems to be a largely uncharted terrain.

The campus market is a huge market. It's one where people can actually make money. It's not all altruistic.

It's a market that turns over every four years — you have a whole new set of customers, and all the old customers are gone. And there's a tremendous number of Macintoshes and Tandy machines and IBM machines on campus. They're being used as a productivity tool by students and faculty members, using word processing and spreadsheets and databases, much like they're being used in the business world.

There is also the workstation market on campus, and the dream of using computers to simulate experiments in chemistry, engineering, architecture, and other areas where computer simulation could be much more cost-effective than real laboratories.

There's a lot of exciting projects — Carnegie-Mellon's already networked over 5,000 personal computers on campus. You can have a personal computer in your dorm room, you can send messages to your professor, or papers, you can access the library and check out books — it's a very powerful tool.

It's a very exciting market where IBM and Apple and DEC and TI have been particularly active, but the rest of the industry has seemed to largely ignore it. So the purpose of the conference was to expose a broader range of companies and people to the possibilities of the university market, and teach them how to sell to that market, and bring them up to speed about the demographics and dynamics of the campus market.

I'd like to see Microsoft be more involved in the market, I'd like to see Lotus and Ashton-Tate and all of the software and peripherals companies, the ASTs of this world, Hercules — all of them pay a lot closer attention to that market, because it's in their best self-interest to do so.

Borland is probably the most popular software on campus. One of the reasons is that it's language tools, because language programs are right for computer science students. But another reason is that Borland has been very active in creating special programs and packages for university students, where if you go into an authorized university bookstore and you have a student ID, you can buy Borland software at a discount. They have just taken a very active interest in that market, and it's paying off for them. They are making money there,

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while some of the other companies are asleep and haven't really paid attention to it. I think it's largely because Philippe [Kahn] was a professor of mathematics, and he knows about this market and he cares about it, so he's doing something about it. Which is interesting, because I think it's largely true in many companies that the chairmen and CEOs of companies, if they're interested in something, they tend to get their company involved in it, and if they're not interested or aware, they tend to ignore it.

But beyond that, there's another factor at work here, which is the fact that by and large university students and faculty are saying, we want more technology. We want more power. We want to do more things with personal computers. They are encouraging us, as an industry, to be more innovative at a time when my sense is that, by and large, the business community is saying, whoa, slow down, we have enough, we have to digest all that we have.

The innovation focus is shifting from the business market to the university market. The innovation of the future that really impacts personal computing is going to take place first in the university arena, and then it will spill over into the business and general markets. For that reason, it's critical for any company that wants to really participate in the leading edge of the technology, and wants to grow with the market and not become obsolete, to be involved with the university market. Companies that aren't involved are going to be left behind, I think.

I just find a great sense of excitement on campus and in campus computing that reminds me of the early days of the personal computer market at large, and that's why I'm excited about it. It's an opportunity to do something really useful and to elevate the standards of education, and at the same time improve the technology of the personal computer. What more incentive could we want than that?

Do you see doing a magazine around that?

That's a possibility, for sure. We don't have any specific magazine plans as of yet. It may happen — for one thing, I think students will be producing a lot more of their own newspapers and literature because of personal computers, even more than they have in the past. It's kind of neat.

Do you ever see getting into something that has nothing to do with computing?

Sure. Lots of things are of great interest to me besides computing. I'm interested in other forms of publishing, other areas — I'm interested in fashion, lifestyle, politics, newspapers (laughs). I'm interested in traveling, I'm interested in being involved with people.

I like helping people on an individual basis. I find that work that I've done at Glide Church [in San Francisco's Tenderloin district] has been very rewarding — there's nothing more rewarding in life, I think, than actually helping someone on a personal, individual basis, whether it's helping them get a job skill or helping them put food on the table or whatever it is. There's more reward in that than there is in anything else that I can think of. I have a lot of interests, I always have. I like sports, I would like to learn how to fly an airplane — I find that very fascinating.

I tend to like people in the personal computer business who have other interests. I don't really like to be in a crowd of people who just talk about personal computer technology and software to the exclusion of of everything else. I find that to be a big bore. Tech talk is not that interesting, really — I'm glad I know what I know what I know about it, and I'm proud of my participation in it and feel good about that, but I think people need to have a more well-rounded perspective and broader interests. I find the people in the personal computer industry who have a broader perspective are the ones that I'm most drawn to.

I don't know — I think it's great to be a participant in this industry, but it's not the only thing going, thank God. (laughs)

The Renaissance computerist.

Well, we are entering into an age where being a Renaissance person is very valuable, because it's useful to have lots of skills. We see that in desktop publishing — we see a merger between editing and design and writing, that suddenly one person who can write, edit and design is a very valuable person. It's a technology that brings together skills, and I think in general that's a thrust of personal computer technology is to allow people to be more diversified and well-rounded. And to value people who have the ability to learn. It's no longer possible in our world to learn something and then go through life relying on the skills that you learned in the past. You have to adapt constantly. You have to have the ability to change.

I like change, it's part of my life that I find very exciting. I'm not afraid of change, and I think too many people are afraid of change, and it can be fun. (laughs)

You can't always anticipate the ups and downs, but you have to learn how to see everything as being part of your experience, and there's always a benefit, even to some of the more dastardly things that happen to you — you usually find some silver lining. ☐

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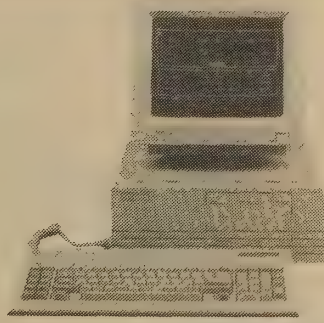

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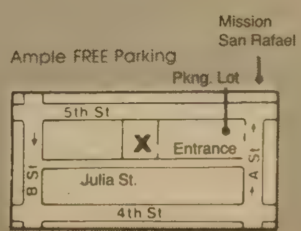

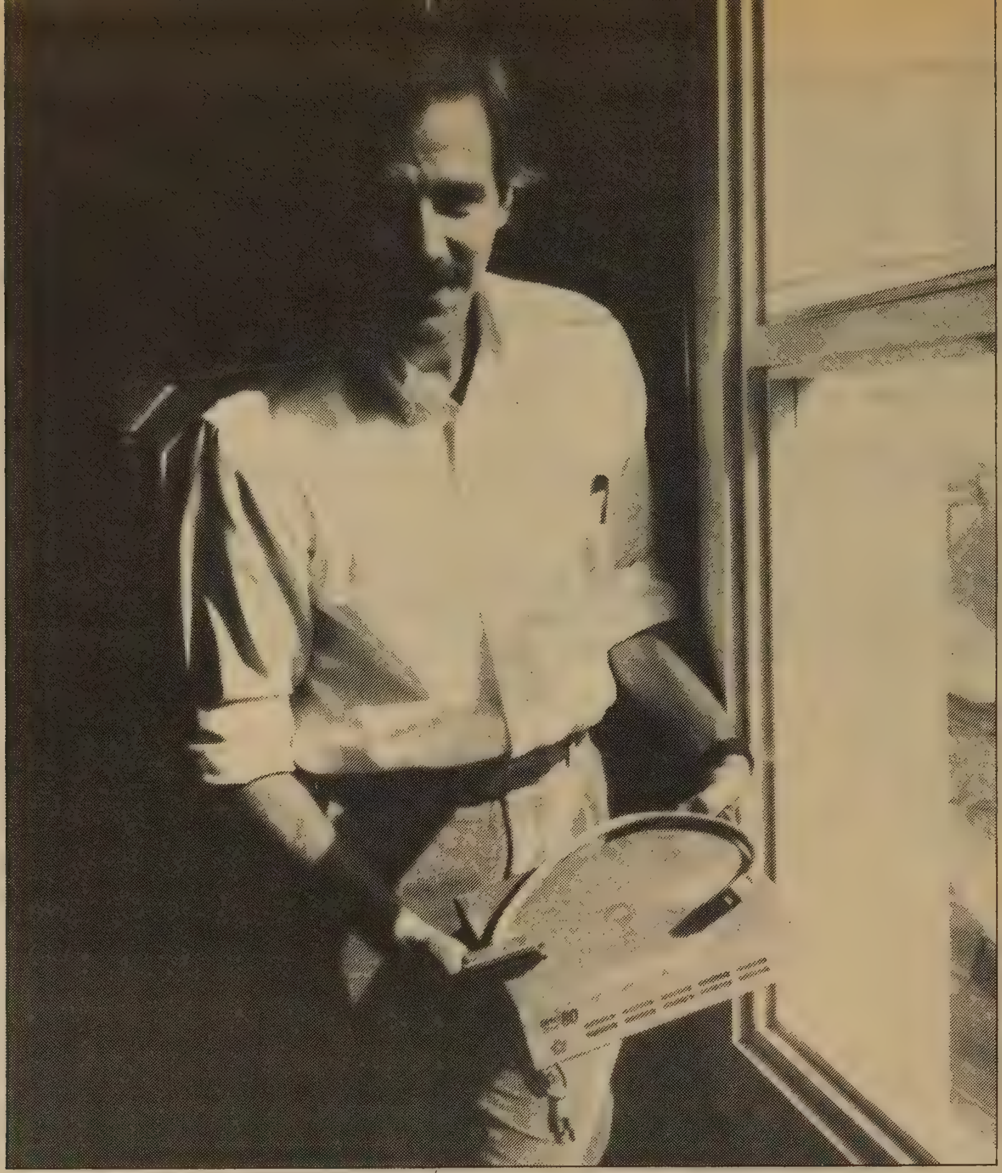

PHOTO: MARY EISENHART

Dennis Trager, Jasmine's marketing and product development vp, shows off the still-working Jasmine drive that survived a fire which destroyed the customer's office and melted the attached Macintosh.

Jasmine Computer Systems:

Mail Order Business Creates Market-Driven Mac Company

By Mary Eisenhart

In May of 1986, Dennis Chang decided to go into the PC clone business and founded Jasmine Computer Systems.

Unfortunately, he soon discovered that hundreds of vendors had the same idea, many of them with elaborate offshore facilities and virtually unlimited capital, and that it was nearly impossible for a small startup like Jasmine to be competitive.

As it happened, though, his associate introduced him to Alan Brunner, who had designed Micah's internal hard drive for the Macintosh. Brunner had also designed an external drive, and wanted Jasmine to market it. Chang liked the drive, looked at the burgeoning Macintosh marketplace (by the end of 1986 the Mac Plus was the single best-selling personal computer in the US), and realized that the market for quality Macintosh peripherals was relatively open.

Still, Jasmine was an obscure startup; as they prepared their 20 megabyte SCSI drive for release, its founders considered the most effective approach to marketing their drives and distinguishing them from the herd. "We looked at the *MacWorld* ads and who was involved, who the competion was," Chang recalls. "They had taken out very small, tiny ads — but we found out through the grapevine that these were producing three to five hundred orders a month. If we could do that, we could get off the ground.

"We noticed that the average price of a hard drive at the time was about $900 – $879 for 20 meg was cheap. Our experience in the PC world was, who would pay more than $600 for a hard drive?

"We wanted to come up with a product that was generic, in the sense that it was a commodity item, and that would really blow the top off the price. We had to be enticing to the public — we had this tiny ad, how could we entice them?

"I figured the timing was absolutely right for us, because nobody had dared have a price under $600. You have to really start a shakedown, and we decided we were the ones to do it with the $599 price." The Jasmine Direct Drive 20 began shipping in October of 1986 with a $599 price tag, and reached hundreds of sales per month almost immediately.

A key factor in Jasmine's ability to sell drives at low prices was the fact that its founders had decided on a direct-sales, mail-order based approach to marketing. Instead of a sales force, Jasmine spent its money on the biggest, best-looking ads it could afford. Says Dennis Trager, vice president of product marketing and development, "Going mail order was a very fortunate choice for us; it was probably the only choice for us at the time. We didn't have to pay a lot of outside sales people, we didn't have to pay a lot of different things — our salesmen were our ads, and we put the money into those salesmen."

But while this low overhead and high volume enabled Jasmine to grow at an impressive rate, another

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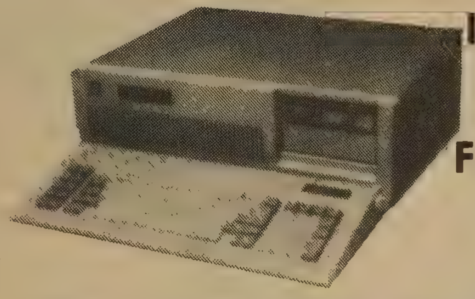

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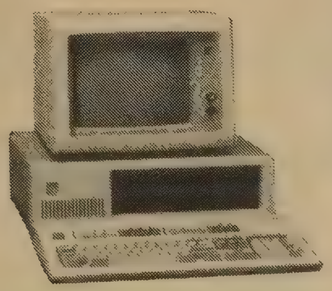

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General manager Ken Krich (l), vp Dennis Trager, and national sales manager Scott Gaidano with the compact Back Pac drive for the Mac Plus.

aspect of its mail-order, direct-sales approach produced a more long-term advantage — by having to be responsive to the infinitely varied (and vocally expressed) needs of individual customers, Jasmine grew as an exceptionally market-driven company. Says Chang: "Being mail order, we get direct complaints — and just as many compliments as we get complaints. This has allowed us to produce the kind of product that the customer wants. We listen to what they want and what they can afford."

When customers asked for features, Jasmine built them in. Jasmine external drives, for instance, include an external SCSI select switch, which Jasmine pioneered. The devices themselves have built-in surge protection, sockets in the rear for plugging in other devices, and a conveniently-located access panel. Each device also has an air filtration system to prevent the accumulation of dust in its innards. (The drives' durability also became the stuff of legend when one impressed client sent in his Direct Drive — a fire had completely destroyed the house and melted the Mac, while the smoke-scarred Jasmine drive works perfectly to this day.)

Customer feedback led Jasmine to suspect that, contrary to then-popular belief, there was a market for high-capacity storage devices in the Mac world — *if* the price was right. Working together with drive manufacturer Quantum to make one of its 80-megabyte drives work on the Macintosh, Jasmine introduced the Direct Drive 80 in January of this year. Recalls Trager: "We saw interest if we could do for the 80 what we did for the 20; in other words, people said that if you can make the 80 as attractive to us as you made the 20, then we're interested. At below $1400, people noticed us."

While the 20- and 80-megabyte drives continue to be Jasmine's bestsellers, customer feedback points out niches for specific and anything-but-me-tooish products. Consider, for example, the MegaDrive, which uses high-density MegaFloppy 10 megabyte storage cartridges. The cartridges can be easily removed for data security and offer effective low-cost storage or backup; using a MegaDrive for files and a hard disk for applications, for instance, offers fast access and economical storage. Another customer request that turned into a product: the BackPac, a thin, self-contained 40 meg SCSI drive that attaches to the Mac Plus' back. Trager explains: "The Back Pac addresses the fact that you've got probably 600,000 Mac Pluses out there, and they're looking at the fact that SEs can have internal hard drives. You can put a kludge internal hard drive in the Mac Plus, but it wasn't designed for it. Plus, if your drive goes down you lose your Mac. The Back Pac you put on the back of your Macintosh, and it's done." Adds Chang: "When Apple came out with the SE, it sent a hard message to Mac Plus owners — no upgrades. I think that was a harsh message, and so we took advantage of that." Jasmine's products also include internal drives for the Mac II and a full range of Direct Drives up to 160 megabytes.

There's general agreement at Jasmine that a key factor in its success is its exceptionally loyal customers. Says general manager Ken Krich: "As far as we can tell, about a third of the 80 [megabyte drive]s we sell are to people who already bought 20s." At the recent Macworld Expo in Boston, he says, "we would talk to a customer and tell them how great this drive was and so on, then get called away and come back, and that customer's telling the next customer." Adds Trager: "Old customers would come into the booth, and they'd listen while we talked to a new customer. And they'd jump right in and say, 'hey, I've got one of those drives, and it's such a great drive...'"

Dramatic growth is causing Jasmine to look for larger quarters, not for the first time in its short existence. On a strategic level, it's expanding its marketing plans. Krich explains, "We're trying to develop a three-corner plan: we want direct mail, we want a good dealer network, and we want to have national accounts. We want all three of those to be strong, but we're not going to sacrifice the one we started out with to build the other two." Chang says: "We don't destroy our foundation to build upon it."

Philosophically, Jasmine's committed to the Macintosh marketplace and its growth and prosperity. Says Chang: "There's a fundamental difference between the way Apple does business and the way IBM does business. We as a company adapt to doing business the way Apple is doing it. We feel very strongly that we've grown with the idea of keeping the spirit of the Macintosh, the spirit of the grass roots in the company as it grows larger." (Jasmine Computer Systems, 555 DeHaro Street, San Francisco, CA 94107) ☐

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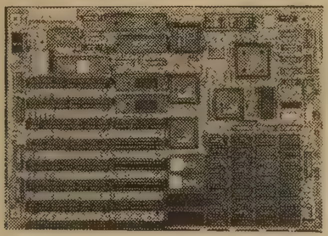

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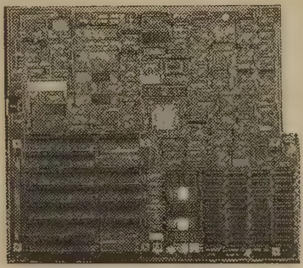

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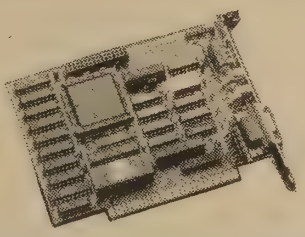

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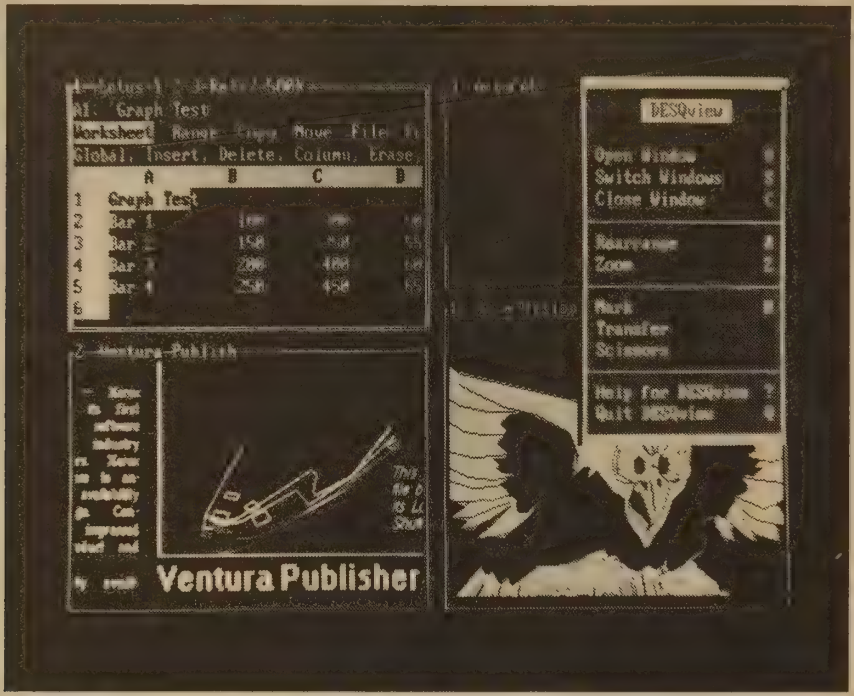

Woody Liswood: "What I like about DESQview is that it does not force you to a single graphic interface. It allows each program to operate in its own window as the designer of the program intended it to run."

DESQview 2.0:

Multitasking For Those Who Don't Want To Wait

By Woody Liswood

Have you wondered about the hype concerning "windows" and "multitasking"?

Well, not to worry. If you need multitasking today, it is available in the form of *DESQview*.

No, it is not a graphic window interface like the Macintosh environment. No, it does not even try to emulate that environment, although if you want to use a mouse, it does provide automatic support for more than one version.

What it does, though, is allow you to run multiple programs in extended memory, or, if your memory is limited, it will also swap programs out to the disk when you activate other programs, so that you can have the appearance of multitasking, if not the true effect.

First, a definition. By multitasking, I meant that the system can have more than one program running at the same time, each in its own window. That does not mean they are all running simultaneously. Each program receives a sequential look by the processor. You can tailor the allocation of resources to fit your own requirements: I instructed *DESQview* to put 20 clock ticks into the foreground application and only devote three clicks to the background application. That way I can continue to let a program print in the background while I get very little, if any, performance degradation in my foreground application.

What I like about *DESQview* is that it does not force you to a single graphic interface. It allows each program to operate in its own window as the designer of the program intended it to run.

DESQview works best on a 386 machine with megabytes of extended memory. You would then also purchase QEMM.SYS from Quarterdeck — QEMM.SYS turns those megabytes of extra memory into memory which *DESQview* will use to run programs. Using it will allow you to run as many as nine programs simultaneously. And, if you have enough memory, each of those programs could be as large as 605K.

Although I did not try it, if you really want *GEM* and/or *Windows* as an operating environment, but are disgusted at the lack of professional level programs which run in them, you can run both *GEM* and *Windows* as applications within their own *DESQview* window and have the best of all the worlds. Remember, all it takes is memory!

Built into the *DESQview* manager is an automatic cut and past facility, which allows you to grab information from any screen being displayed and transfer it into any other window. It works with just a touch of a few keys. Also included is a DOS window so that you can work with DOS from a "shell" type of environment. While not as nice as the commercial shell programs such as *1DIR*, the DOS environment does allow you to point and shoot using your arrow keys or a cursor to help eliminate typing mistakes. There is also an autodialer which can dial your phone for you by grabbing the number off the screen and dialing any Hayes compatible modem. And, if you like macros, *DESQview* has a learn command which memorizes your keystrokes while you type them.

DESQview Companions

If you are used to the *Sidekick* type of memory resident utilities, you can run *Sidekick* as a *DESQview* window or spend some money to get a set of *DESQview* companions which add these types of features as their own windows.

The *DESQview* companions contain a calculator, a notepad, a calendar and a telecommunications program. The only one I would recommend is the calculator, which works nicely under *DESQview*. The notepad is modeled, as is *Sidekick*, after *WordStar*, but it lacks the sorting capability of *Sidekick*. The telecommunication program was probably adequate a few years ago, but lacks many of the features of any of the shareware programs. If you need telecommunications, I would still recommend *PROCOMM* or *QMODEM*. The daytimer works great and would be a good addition if you need that sort of program.

Installation

Installation is moderately easy. You run an install using the QEMM disk. Then you run an install using the *DESQview* disk. *DESQview*, when started this way, will check your hard disk; any programs you have out there which match the present program conditions in the *DESQview* libraries are automatically installed for you. Otherwise, you will need to go into the *DESQview* add-a-program mode to tell it about any other programs you want to run.

However, with the multitude of things *DESQview* is doing and the even larger variety of methods your programs use to get things done, there will be a lot of trial and error frustration as you get the program initialized to your world view and programmatic philosophy. If you have a high tolerance to ambiguity, this will be a fun time. If not, and you are not a professional bit and byter, don't beat the computer. It didn't do anything, you did.

The manual, while complete, makes sense mostly after you needed it the most. When it gets esoteric and attempts to explain about pages in virtual memory, I blank out. Mercifully, Quarterdeck's help line is very good, returns calls if necessary and was courteous in explaining what, to the support staff, must have been the most basic of questions.

I ran into a problem trying to get *DESQview* started on my Wang IBM based 386 machine with 2.5 MBs of memory. It would only go into an automatic reboot. After a week or so of struggling, I finally swapped the Wang EGA board for my Vega 7 which I use on my no-name clone. Everything worked fine. Turns out the Wang board really is the Paradise Autoswitch. I set the board to permanent EGA mode and *DESQview* worked fine, but it took awhile to figure that one out.

Then, many of the programs I wanted to run told me that I had memory problems when I first installed them. What I did was use the

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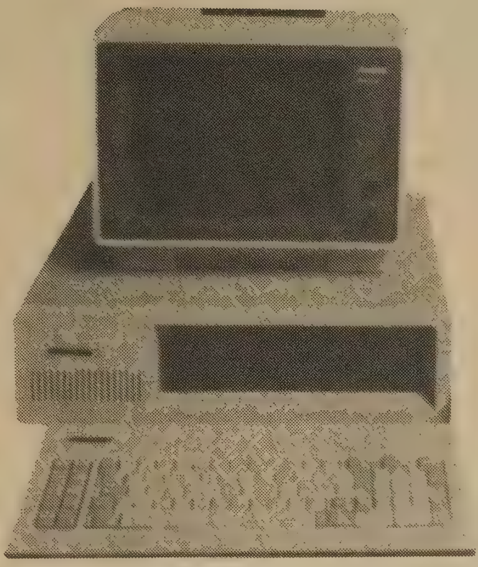

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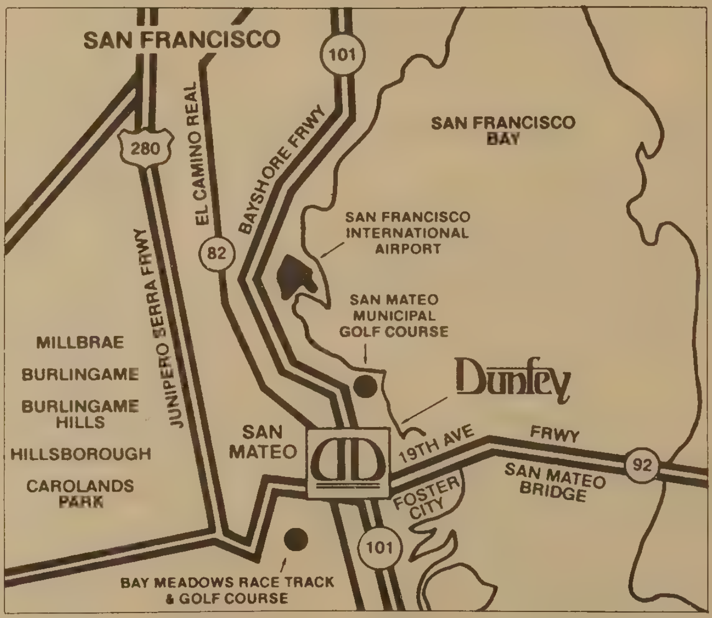
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DESQview does not force you to a single graphic interface. It allows each program to operate in its own window as the designer of that program intended it to run.

change-program mode of *DESQview* to gradually decrease the memory requirements of each of the programs until they all ran.

As of today, on the 386 box, everything I have, runs. This includes programs such as *Lotus*, release 1 and 2, *Procomm, Sidekick, dBASE III, Instaplan, Norton Utilities, WordStar 4.0, Wordstar 2000, Xywrite III, Art Of Negotiating*, , *VP-Planner, Vfeature*, MicroSoft Mouse Com port, MicroSoft bus mouse, DOS, *DESQview Calc* and many more.

Running Under DESQview

I identified the SYS REQ key on my keyboard as the key to activate *DESQview*. I automatically boot into *DESQview* from the Autoexec.bat file. After opening the program I wish to run, I can call up *DESQview* by pressing the SYS REQ key or both mouse buttons simultaneously. The manager allows me to close the window, or open another window, cut and paste, change windows, modify program specifications to run under *DESQview* and even to change the *DESQview* setup itself.

It took about one minute to get used to the interface. Another minute to get used to the mouse, and that was it.

DESQview also allows you to move and/or change the size, initial location and color usage of any of its nine windows.

When leaving a window, you have the option of allowing it to continue running or to freeze it in the background. Programs like *Lotus* always check the keyboard, so if you are just pushing the program into the background and it does not have a task to do, it is better to freeze it so that it doesn't waste system performance.

DESQview normally assigns a small size screen window to a program when you activate it, unless that program automatically writes to a full size screen. However, if you wish to expand the window to a full size screen, you activate the *DESQview* menu and press Z for Zoom and you get that screen immediately.

To add a program, you enter the *DESQview* menu and select open-a-window, then add-a-program. You give the program a name, tell what keys to use to call it from the menu, what size to reserve for it in memory, where it is located and how to call it up. You can also add any switches you might normally use to the call up procedure. You need to specify if the program writes directly to the screen if it displays graphics information, if it can be swapped out of memory and if it requires a floppy disk to run.

If the program does not write directly to the screen, then it can run in a smaller window.

You would want to specify that your communication program cannot be swapped out of memory, since by doing so it would lose its connection with the modem and the telephone line.

There are a number of other questions to answer on additional set up screens for more advanced usage. The ones you will most likely want to change are whether to return to *DESQview* or to DOS when you exit a program, to allow the program to use its own colors or ones selected by *DESQview*, to tell whether the program uses a math coprocessor or to specify that a program may only run in the foreground.

The learn and macro features work simply. When you are at the point where you want to record a series of keystrokes, call up *DESQview* using the Shift key along with whatever key you selected to call up *DESQview*. Then you start recording. When done, do the same thing and it stops.

You can use the recordings as macros for your own programs or as macros to give *DESQview* sets of instructions.

I also ran *DESQview* on my no name clone with a 286 card and about one MB of memory. It ran the same way, but since it had no massive memory for QEMM to work with, I was unable to get multitasking. *DESQview* would swap every program I had in the background to disk. It allowed me to have multiple programs all active, but only one running. Also, it used substantially more memory on that machine, and a few of the programs which I use, such as Instaplan, did not have enough memory to load after I had already loaded *DESQview*.

Many people have been waiting for a good multitasking environment for their PC. *DESQview* is a good windowing program for those with a 386 machine and megabytes of memory. It's available now. And it works. (Quarterdeck Office Systems,150 Pico Boulevard, Santa Monica, CA 90405. 213/392-9701.) ☐

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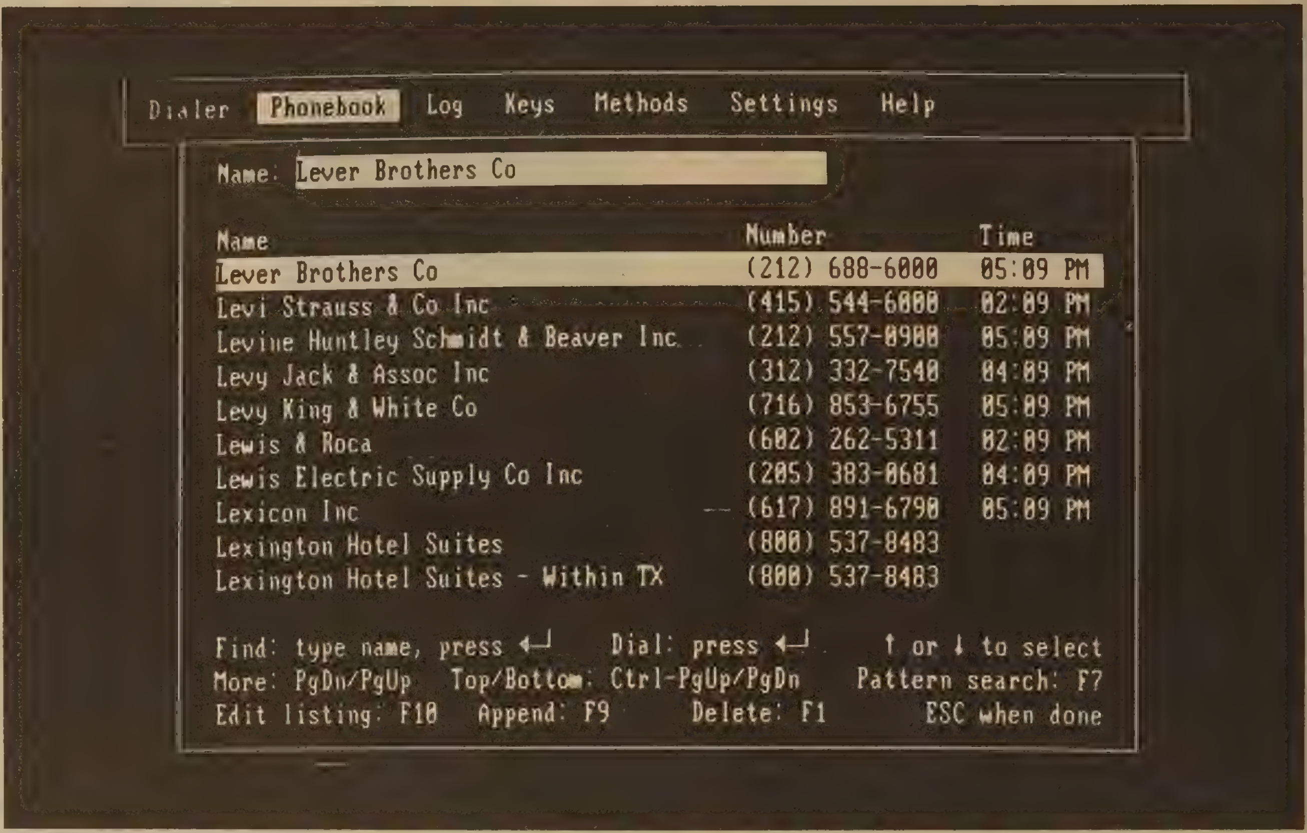
Telephones And The PC Connection

By Ed Kahn

As Macintosh software poured out and the spiffy new Macs hit the market, I began to feel left out. For all its speed and memory, I was feeling bored with my souped up AT-class IBM compatible powerhouse of yestermonth. Who needs another word processor, spreadsheet, or database? The new products are not revolutionary. They are merely elaborations and refinements.

Just when I was about to give up, however, three new products marrying the PC and the telephone came to market. These products, *Hot Line*, *BigmOuth* and *Freeway*, change the way you use your phone when glued to the computer.



```
Name: Lever Brothers Co

Name                                     Number          Time
Lever Brothers Co                        (212) 688-6000  05:09 PM
Levi Strauss & Co Inc                    (415) 544-6000  02:09 PM
Levine Huntley Schmidt & Beaver Inc      (212) 557-0900  05:09 PM
Levy Jack & Assoc Inc                    (312) 332-7540  04:09 PM
Levy King & White Co                     (716) 853-6755  05:09 PM
Lewis & Roca                             (602) 262-5311  02:09 PM
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Lexington Hotel Suites                   (800) 537-8483
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Find: type name, press ←┘     Dial: press ←┘       ↑ or ↓ to select
More: PgDn/PgUp  Top/Bottom: Ctrl-PgUp/PgDn    Pattern search: F7
Edit listing: F10   Append: F9      Delete: F1         ESC when done
```

Among Hot Line's many features is an alphabetical listing of thousands of the United States' largest corporations. It shows not only the company name but its phone number and the current time in that location.

Hot Line

The first program is so amazingly simple in concept it is a wonder that nobody developed it before. It is a super-deluxe memory-resident telephone dialer which dials through your modem. *Hot Line* ($39.95) is so straightforward you can pretty much run it with no documentation whatsoever. The literature included in the package, in fact, is a small foldout that looks more like a brochure than documentation. It guides you through the simple installation and directs you to use the built-in help menus.

Once installed, the program does everything you could want—almost. The entire program is accessed through the <Alt> key pressed at the same time as one of the ten function keys on the PC keyboard. <Alt> F1 brings up an alphabetical listing of some 2,000 of the largest corporations in the United States. To find the company you want, simply type its name in the box at the top of the screen and hit return. The directory then moves to the listing which shows you the company name, the phone number, including area code, and the current time in that location. Hitting return again dials the number. Pick up the phone. When it's answered, hit the space bar. Should you need to redial, hit <Alt> F7.

Another pre-configured key combination allows you to find the area code for almost any city in the country. After the listing comes, a touch of the return key will connect you to directory assistance in that area code. Another combination of keys puts you into an instant dial mode. You can program up to three sets of ten numbers each to automatically dial your most frequently called numbers. Hit the appropriate function key and the number is automatically dialed.

One nifty feature allows you to automatically dial any number that appears on your screen — even from another program. So, for instance, if you have a document on screen that lists a number you wish to dial, just hit <Alt> F9.

The list of features go on and on. The real heart of the program, however, is the personal directory which can hold up to 65,000 entries, limited only by disk space. You can either create the listing from scratch with any word processor or convert from a database which you already have. *Hot Line* contains code to allow you to import files from *dBASE* as well as other popular formats. Installation includes telling the system your area code, as well as which prefixes within your area code are local calls. Thus, *Hot Line* knows whether a call is local, toll, or long distance.

Pressing <Alt> F6 allows you to enter a phone number to be dialed directly from the numeric keypad, without switching the NumLock key to on. This is a real convenience and reflects the generally thorough care with which the product was designed. To cap things off, the program will make a log of all of your outgoing calls if you like.

Despite the overall quality of the package, there are a few shortcomings. The most glaring weakness shows up in adding a new entry to your personal listing, where the procedure is not as simple as it should be. The procedure calls for adding the listing with a word processor and then recompiling the list for *Hot Line*. This is not difficult, but it is cumbersome. I find that I usually wait until I have several new entries before recompiling. Even though this procedure is not as simple as one would hope, even the most inexperienced novice can easily add names to the personal directory, as the procedure for compiling consists of nothing more than hitting a few keys listed in the *Hot Line* menu.

A second shortcoming will affect only those people whose local calling area includes portions of two area codes. In sections of Los Angeles, for example, local calls embrace prefixes

Hot Line is so amazingly simple in concept it's a wonder nobody developed it before — a super-deluxe memory-resident telephone dialer which dials through your modem.

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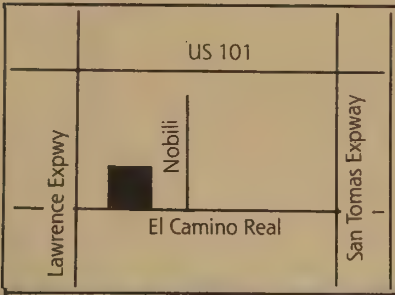

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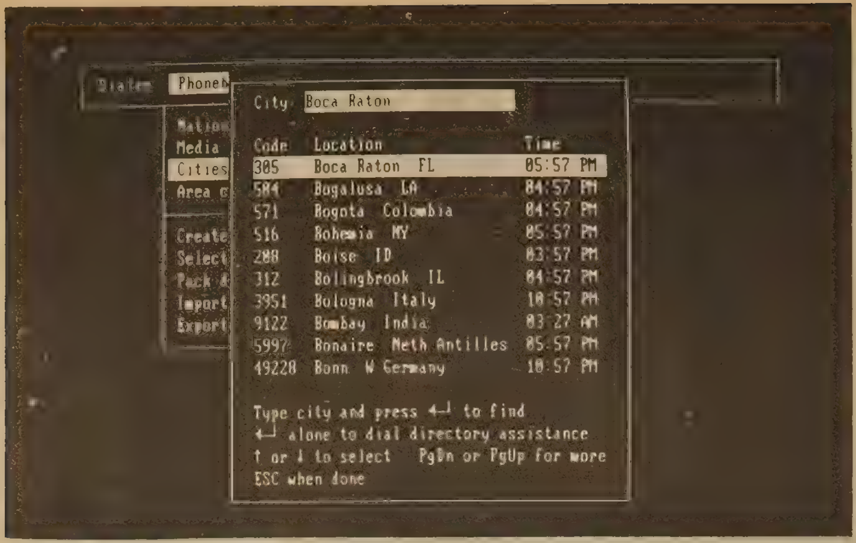

```
City  Boca Raton

Code   Location                    Time
305    Boca Raton  FL              05:57 PM
504    Bogalusa  LA                04:57 PM
571    Bogota  Colombia            04:57 PM
516    Bohemia  NY                 05:57 PM
208    Boise  ID                   03:57 PM
312    Bolingbrook  IL             04:57 PM
3951   Bologna  Italy              10:57 PM
9122   Bombay  India               03:27 AM
5997   Bonaire  Neth Antilles      05:57 PM
49228  Bonn  W Germany             10:57 PM

Type city and press ←┘ to find
←┘ alone to dial directory assistance
↑ or ↓ to select   PgDn or PgUp for more
ESC when done
```

One of Hot Line's directories consists of a list of area codes for more than 3,000 cities around the world. Hot Line will also automatically call directory assistance in that area for you.

in both areas 213 and 818. *Hot Line* does not know how to handle this and treats one or the other prefix as a toll call. While this does not make dialing any more difficult, the log will list these calls as toll calls.

A final criticism is about an actual bug. The log lists the telephone number, its location, and the party called if it is a listing from one of the *Hot Line* directories. But if you use <Alt> F6 and enter a number to call, the log listing will only show a phone number and the location, based on the area code. I wanted to edit this ASCII file to include the name of the party called. When I had finished, I found that subsequent calls were not logged into the file. General Information, the publisher of this excellent program, tells me that all of these problems are being corrected in a new and vastly improved version, to be released around the time you read this article.

BigmOuth and The Complete Answering Machine

Not long after learning about *Hot Line*, I heard of two other telephone-related products. Both are very sophisticated telephone answering machines that run circles around any stand-alone machine you can buy. While both *BigmOuth* ($239.00) and *The Complete Answering Machine* ($350.00) offer many of the same features, your choice will depend on just what you want to do. A major difference is that *The Complete Answering Machine (CAM)* is memory resident. Thus, you can be working in an application and *CAM* will still answer and handle any calls that come in. Whether this is an advantage or not depends upon your use and personal style. For myself, I always answer the phone when I hear it ring, so the memory resident feature is actually a disadvantage for me. I would prefer to activate the program when I leave and turn it off when I return home.

CAM is easy enough to activate by typing "answer," but to turn it off, I have to do a warm boot, which is more time-consuming than pressing an exit key to deactivate *BigmOuth*.

Both programs include a board as well as software. *CAM*, however, uses considerably more disk space than *BigmOuth*. Both systems work by plugging a phone line and a telephone into the jacks on the back of the board. A modem is not used. Both systems can answer with a greeting in your own voice.

If you are dedicating a whole computer to managing the phone, you may prefer some of the features of *CAM*. One of the nice touches is that you can ask for the last eight seconds of a message to be replayed. The theory is that this will include the phone number portion of the message. Also, *CAM* has more professional-looking documentation that is a bit easier to understand. In addition, the package includes a template for your telephone and a quick summary card to carry in your wallet or purse. The system has a unique feature which allows callers to review and edit the messages they leave. I find this feature to be confusing for the general public, but potentially useful for a phone system that serves a limited number of callers who know the capabilities of the system.

BigmOuth also has a number of features that set it apart from the competition. One particularly useful option allows you to set a toggle so that you can use your own phone to simulate an incoming call. In this mode, when you pick up the phone, *BigmOuth* will answer so that you can test the system and do everything that you could do as a remote caller. If you have only one phone line, this saves a lot of inconvenience when initially setting up the machine.

While both systems will allow the use of an external speaker, *BigmOuth* provides one. *BigmOuth* also has a number of other unique features that give it added power. It allows you to incorporate a database of phone numbers into the system. You can then use this list for speed dialing in a fashion similar to *Hot Line*. While *BigmOuth* has a few more capabilities than *Hotline* in this regard, it lacks the convenience *Hot Line*'s memory resident status provides.

A unique feature of *BigmOuth* is its ability to automatically redial a number up to 15 times if the line is busy. Another feature that may be useful is the ability to record and play back voice messages from the DOS prompt. Thus, you can construct batch files that will speak instructions as part of the program. For the more adventurous, it is possible to create programs that incorporate spoken messages from the files that have been recorded with this feature.

A final perk worth mentioning is *BigmOuth*'s ability to be tied into an alarm system. In the event that an alarm is triggered, the system will make a series of calls according to your instructions.

Both *BigmOuth* and *CAM* have a wide range of features in common. You can set the systems up to accommodate a large number of mailboxes so that every person who may get messages has his or her own mailbox. Personalized messages, in the voice of the boxholder, will answer the individual boxes. You can also arrange for frequent callers to have boxes where they can pick up messages from you.

Both systems also allow you to automatically make calls at times you determine to a list of numbers. They let you know if the calls have been received and can require a voice response which you listen to later. I found this feature useful when late for an appointment. I tried to call the person I was to meet and, when there was no answer, I instructed my computer to call with my recorded message every few minutes until there was an answer.

Another feature that runs circles around any simple answering machine is the ability to know when calls come in. Both systems will give you this information, even when you call in from another phone for your messages. And finally, the system will call you at a different number immediately after a message comes in. Thus, you can leave a message for the caller saying that their message will be forwarded to you as soon as they hang up and that you will call back within a few minutes.

All in all, either of these systems will spoil you. Every feature I had on my list for a telephone answering machine is included, plus other features I never dreamed of.

Freeway

The last phone-related item is a new communications program that is the simplest, most straightforward package I have tried. *Freeway Advanced* ($89.00) is built around a series of menus. The opening menu allows you to configure the system and enter the particulars of up to 100 telephone numbers that your computer regularly accesses.

After you have initially entered the parameters for the different listings, making a connection is as simple as pressing the enter key. If you want to automate the log on procedures, press the autoteach key from the main menu, and all of the keyboard entries plus the responses from the remote system will be logged until you press autopilot cancel. After this, when you choose that phone list, the autopilot will automatically deliver control back to you after all of the logon procedures have been completed.

Although all communications programs do essentially the same thing, it seems easier on *Freeway*. The program is filled with options that make using a modem easy. You can, for instance, name a different log file for each listing you enter in *Freeway*'s phone book. This will automatically save the whole session, which you can later edit or delete. I also found that the program worked perfectly in transferring material between two computers connected simply by cables. I just chose the listing and hit return. On the second computer, I simply uploaded a file. The results were automatically saved on the log file I had created upon installation of *Freeway*.

The documentation is designed for someone who wants to get started without wading through piles of technical information. This doesn't mean, however, that this is a simple program that leaves out the options you find in more complex programs. The tutorial begins by walking you through initial setup; it then takes you through a sample session. Kortek, *Freeway*'s publisher, incorporates its own BBS into the tutorial; the sample session is a real session which costs you nothing except the telephone charges. The third tutorial has you set up autopilot for the Kortek bulletin board. The rest of the documentation introduces you to other features of the software, but against a background of your knowledge of how to use the basics.

The features include an emulation of *Crosstalk*'s command language, instructions on how to write a script using *Freeway*'s commands, and a timer that will allow you to automatically have your system perform the functions you indicate in a script at a time you set. If you've been thinking about getting in touch with the remote bulletin boards that are listed in each issue of *MicroTimes*, *Freeway* is a good software package to get you started.

Resources:

BigmOuth. $239. Talking Technology, Inc. 6558 Lucas Avenue, Suite 301 Oakland, CA 94611 (415) 339-TALK.

The Complete Answering Machine. $350. The Complete PC, Inc. 521 Cottonwood Drive, Milpitas, CA 95035, (408) 434-0145.

Freeway Advanced. $89.00. Kortek Inc. 505 Hamilton Avenue, Palo Alto, CA 94301 (800)327-0310.

Hot Line. $39.95. General Information Inc., 401 Park Place, Suite 305, Kirkland, WA 98033. ☐

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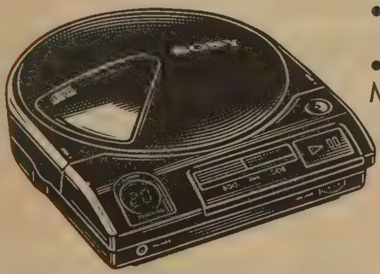

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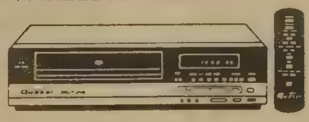

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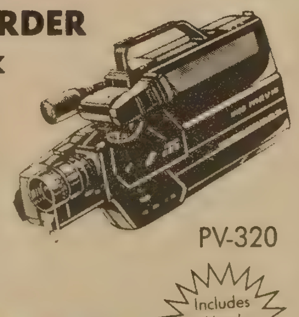

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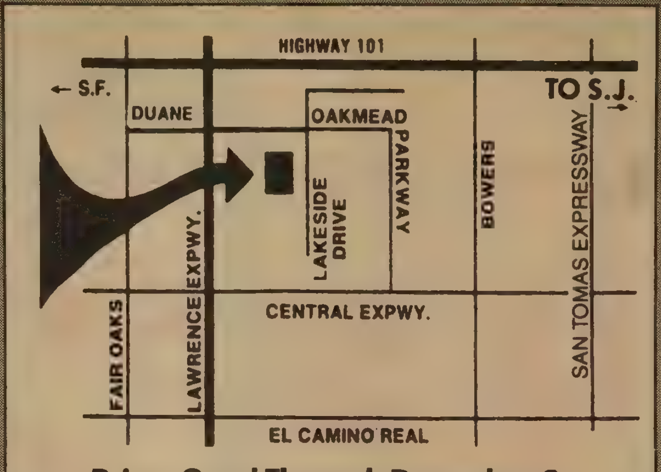

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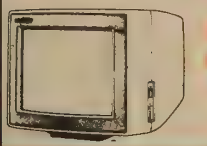

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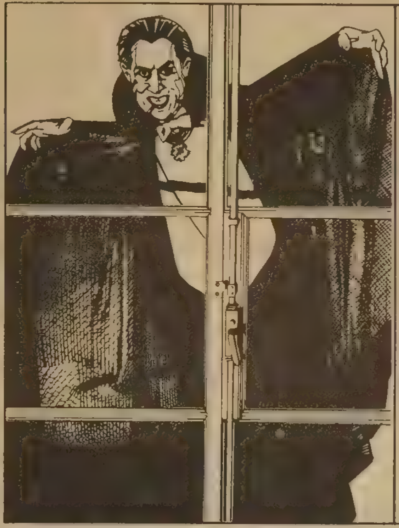

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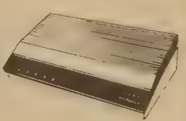

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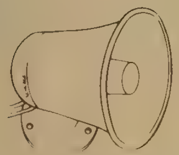

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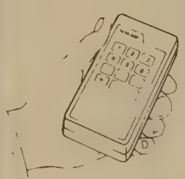

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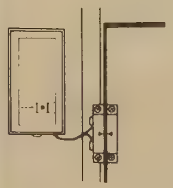

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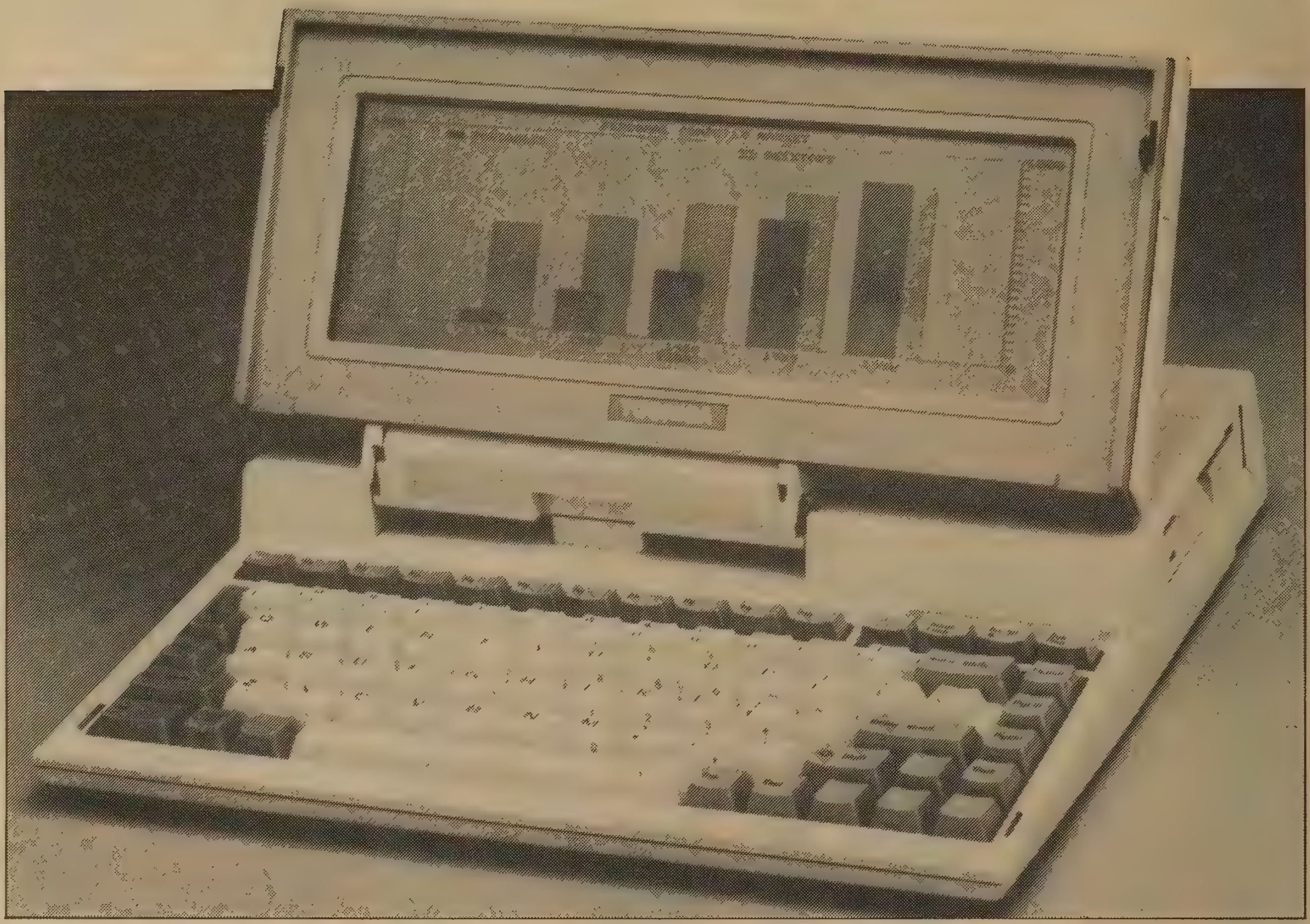
The Toshiba T1000 Laptop

A Full-Featured, Low-Cost Portable

By Jeff Spurrier



Just a few short years ago, industry pundits were declaring the laptop market dead, a good idea stillborn because of the lack of a user base, not-quite-there technology, and budget-busting prices.

Then Toshiba released its first two laptop computers: the T3100 and the T1100. Both featured plenty of power, a small lightweight package, and adequate screens. While both machines offered more power for the buck, they were still not cheap, and the imposition of tariffs by the U.S. Congress pushed up the prices of the dwindling inventory even more.

Well, don't fret. For those of you who revel in the idea of having a full-featured laptop that won't break your arm or your bank account, the lightest and cheapest Toshiba laptop is now in the stores.

The low end leader in Toshiba's laptop series is the T1000, a single 3½″ 720KB disk computer with 512KB memory and an 80C88 processor (which is not affected by the current tariffs thanks to its 8-bit bus configuration). The T1000's list price is $1199, but some outlets are selling it for as little as $850, making it truly affordable for writers, students and businessmen-on-a-budget who need a traveling machine.

With dimensions of 12.2 inches by 11 inches by 2.05 inches and a weight of 6.4 pounds, the T1000 is the computer you can take with you just about anywhere. And with a hefty supply of interfaces included as standard (parallel, RS-232 serial, RGB, composite, external 5¼″ diskette drive and numeric keyboard), the T1000 allows you to walk out the door and immediately start working.

Other standard features include an 82-key keyboard with a pleasant feel and function keys arranged across the top, a "Supertwist" LCD display (640 × 200) which is adjustable to a full 180 degrees, MS-DOS 2.11 in ROM, and a rechargeable battery which can last up to five hours (depending on how often the disk drive is accessed).

The processor runs at 4.77 MHz and clocked in at a perfect 1.0 using the PC Labs benchmark tests from *PC Magazine*. Under the ROM DOS 2.2, the fastest Toshiba disk access time of 1000 random sectors was 290.04 msec per sector (with no errors).

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Another standard feature (and a very welcome one) is Toshiba's Exceptional Care warranty, which gives you repair/replacement coverage for one year. If you have any problem with the machine, you can mail it back, and a loaner, which you have the option of keeping or using while your machine is being fixed, will be shipped out to you.

Finally, while these are not standard features, mention should be made of the Toshiba Tech support line (800/433-5999) and the Toshiba Technical BBS (714/837-4408). The people at the Tech Support line were extremely helpful and quick with their answers and suggestions. The Toshiba BBS was even more of a joy, with tons of downloadable software, advice, and comments.

Hands On

In my two weeks of playing around with the T1000, I could find nothing of major significance to complain about (which may not be true for users whose needs are different from mine—see below).

The screen was perfectly readable, and, while it was hard to see the cursor when working with a full 25 lines of text, changing the cursor shape (with CURSOR.COM) helped greatly. I found the keyboard a little mushy, and with all those keys crammed together in such a small space, it was hard to avoid mistyping. But like any new keyboard, after a few hours it felt much better once I was more used to it.

Relying upon only one drive, however, was something that took a little more patience. Having gotten used to having 20 megabytes of power at my fingertips, I found it somewhat annoying to have to be constantly switching disks when copying files or loading programs. But when you're only carrying around six pounds, some sort of trade-off is inevitable. And the convenience and

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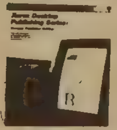

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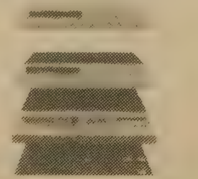

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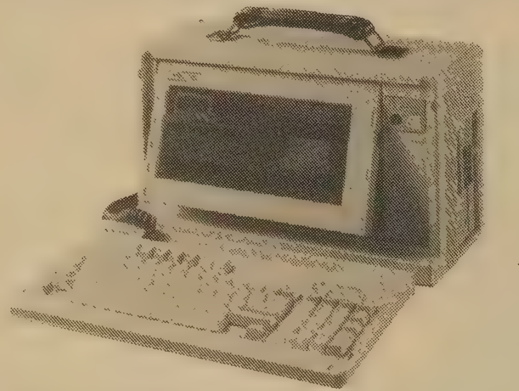

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Eventually there will be a whole new generation of scaled down affordable laptops, but for now, you can't go wrong with the T1000. If other machines are slow to hit the market, the T1000 could be the Model 100 of tomorrow.

720KB size of the 3½" disks really reduced the irritation factor.

And unlike my previous laptop machine (an old Epson Geneva CP/M laptop with 64KB RAM), the Toshiba gave me no problems with writing, composing, or moving text. With *Word Perfect* loaded into the Toshiba, I felt free to fly wherever my fingers took me. So far I've used the machine to take notes in the car in Little Tokyo, work on a story on the train to San Diego, and take notes while doing a phone interview at the *L.A. Times*. Never did I feel under-powered or over-burdened. (In fact, at the *Times*, I found the Toshiba much faster and more convenient than using the paper's massive mainframe system.)

And unlike my Kaypro PC (see below for more), the Toshiba's ports are all standard. Plugging my printer into the laptop produced instantaneous and perfect results.

The Downside

For all its size and generous supply of standard features, the T1000 is not the perfect laptop. There is no room for either a V20 chip or a math co-processor, and the 512KB memory limitation can be a real drawback (although with the optional 768B EMS card this can be boosted to 640KB). However, since I used the T1000 primarily for word processing and am used to the 4.77 speed of my Kaypro, none of these design glitches presented a major problem.

And then there's the problem of getting your desktop files onto the T1000 and vice versa. For most users this shouldn't be a headache. Toshiba sells a package called *Floppy Link* ($199) for this purpose, and there are other choices as well (*Brooklyn Bridge* and *Lap Link*, to name two). Those of you who have a Kaypro PC (as I do) will find it somewhat more frustrating. Because the Kaypro serial port is non-standard, getting the Toshiba to talk to my Kaypro was impossible. The only solution I've found after numerous calls to Kaypro, Toshiba, and the makers of *Brooklyn Bridge* is a 3½" drive for the Kaypro or a 5¼" drive for the Toshiba.

Finally, it would be nice to be able to tell just how much time you have left on your battery. Aside from the little red light that goes on when there's about ten minutes of battery life left, you're guessing just how much you've accessed the disk drive. An intelligent solution would be to have some software built into the ROM files which could illustrate with a bar graph how much time remains. Certainly someone will eventually upload a public domain file to the Toshiba bulletin board, but for now, being unpleasantly surprised at an inopportune time is a constant worry.

Options

When you're spending less than $1000 for a computer, you can certainly afford a few options. Among those offered by Toshiba are the EMS card, which provides 128K of user RAM and 640K of LIM-EMS (and is not exactly a bargain at $549, but may come down in price if the tariffs are dropped), an automobile power adaptor ($59), a 300/1200 Hayes-compatible modem ($399), a 5¼" disk drive (which seems far over-priced at $499 considering the going rate), an external 17-key numeric keyboard ($99) and DOS 3.2 on a 3½" floppy ($75).

The Right Choice

So now, with a whole zoo of new laptops hitting the market, there's a real choice for the laptop buyer. Datavue has the Spark (which is selling for about $999 locally), Kaypro has announced a new upgraded version of its laptop (for more than $2,000), Zenith and others have larger, more readable 5¼" machines, Data General has the new Model 2T, NEC has the Multi-Speed (which is incredibly fast and has a great screen), and on and on. But in its price range and size, the Toshiba has all the others beat hands down. Nothing is lighter, faster, cheaper, or has as many standard features.

Undoubtedly there will be a whole new generation of scaled down affordable laptops eventually, but for now, you can't go wrong with the T1000. If other machines are slow to hit the market, the T1000 could be the Model 100 of tomorrow.☐

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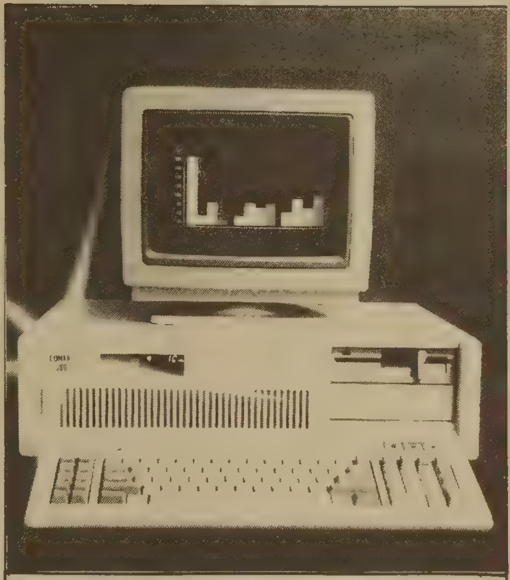

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The Datavue Spark is a low-cost portable with many desirable features and a few flaws.

The Datavue Spark

By Wayne A. Yacco

Using laptop computers allows users to perform most common business applications with nearly complete freedom of movement. They also open possibilities for new applications. The power of these new applications and the possibilities of performing old tasks in new ways is one of the lures of these machines, which are attracting managers, executives, and salespersons in droves.

The Datavue Spark is a very inexpensive and powerful laptop computer. It has features which could even let it serve as a desktop system in certain limited applications. There are some flaws too: at least one potentially major problem, which might be enough to keep some users from buying the Spark.

The Spark is one of two new entries from Datavue (the other is called the Snap). Datavue offers an extensive line of portable computers and is one of the companies held by a Master Limited Partnership called Intelligent Systems. The partnership owns several companies: Quadram, Peachtree, Asher Technologies, and Princeton Graphics, among others. They offer some of the more popular products on anybody's list.

First, A Few Flaws

Although the Spark has computing features which transcend the ordinary, its 9.54 megahertz turbo speed for example, some corners have been cut to achieve its low price. The battery pack, nearly half its full 640K memory complement and its second drive are all options. Add an internal, Hayes-compatible, 300/1200-bps modem and the low price begins to climb a little. It's still inexpensive, though, because the base price is only about $900. That's not the problem.

The difficulty is with another cut corner, the choice of materials used in the design of the display's hinge. When I first opened the unit, the friction hinge impressed me with its ability to angle the display panel precisely to the best viewing angle. It seemed like a design which would be relatively maintenance-free. After only a dozen or so cycles of opening and closing, though, it failed.

It might have been a fluke, I doubt it. What apparently happened is that the plastic case material, certainly chosen for its durability, failed to maintain its tolerances in the hinge. The friction hinge was simply too tight. That snugness placed too great a load on the rack and pinion mechanism. Then the display's grip on the hinge failed. The hinge may be a good design, but it needs to be made from a material which will maintain the dimensions required for free movement. Until that modification is made, it's possible that the unit may also lose its grip for other users.

To be fair, it is possible that I handled the display improperly, but my guess is that this hinge will cause problems for other users as well. If it was that easy for me to make a mistake handling the Spark, others will too.

Other aspects of the display are superior. Spark uses a super-twisted birefringent liquid-crystal display. It is easy to see even without the electro-luminescent backlighting option, and is easier to work with than other unlit displays, such as the NEC Multispeed's.

A second annoyance is the lack of separate lamps for drive access. The unit has two lamps, but one is dedicated to the external (and in this case nonexistent) drive. It should have been simple to use one lamp for each of the built-in drives and both lamps simultaneously for the external.

The power switch is on the side of the unit not far from one of the unit's drives. It is a rocker switch that some users will find all too easy to trip accidentally. I would much prefer a sliding switch that's a little harder to trip.

Finally, there is the DOS shipped with the unit. It's the old 2.11 with a modification that allows it to use the 3.5-inch drives. Like Xcopy and Append? Too bad, you'll have to use them at your own risk. DOS 3.2, the one supplied with machines like the Multispeed, seemed to work fine with the Spark until I tried to format some blank microdiskettes. It would only format them with 360K bytes of capacity. I used Xcopy with apparent success, but who knows? Could I trust it with really valuable data?

Features

There are many features which make this a desirable unit otherwise. In addition to its turbo speed, the nine-pound device includes a reset button, an RS232C port, a parallel port, both RGB and composite video outputs, an external floppy-drive port, a built-in clock and an external bus slot for attachment to an expansion box. An optional carrying case adds to the limited portability offered by the built-in plastic bail.

The keyboard has both tactile and variable audio feedback, and the home row is identified by raised dots on the F and J keys. As with most portables, this one suffers from the layout of the keys. The backslash (\) is difficult to reach, for example. There is also a special function key which is used to turn part of the alphabetic keyboard into the numeric keypad. The cursor pad also served dual functions via this key, alternat-

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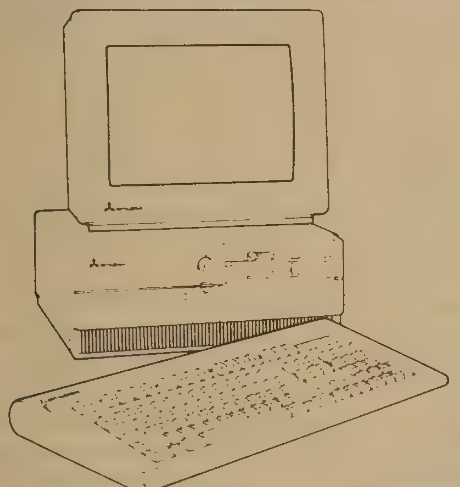

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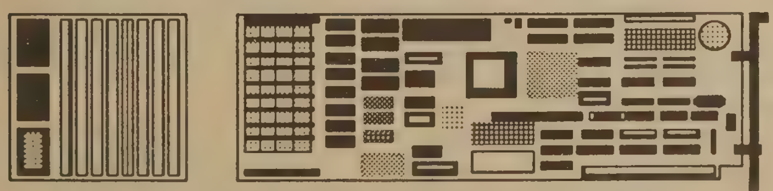

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ing between single movements and PAGE, HOME, and END functions. It was difficult to become accustomed to this, but ordinary text entry was a delight. The keys don't wobble like those on some other machines. Its feel is almost perfect: the first portable keyboard that I've used with the satisfaction I get from my IBM.

Documentation consists of a DOS manual and a simple user's guide. These are sufficient to answer most questions that a user will have, assuming prior familiarity with the IBM PC family of microcomputers.

Multifunction Laptop Software

The only software provided with the Spark is DOS. There are no ROM-resident utilities. In order to test the machine, I installed the *WordPerfect Executive* from WordPerfect Corporation. This application has been designed for laptop use. It includes essential support functions for an executive working in a limited-resource environment: on the road, without a desk, on a small machine.

Its word processor is identical to *WordPerfect* with the exception of certain absent functions. For example, the program has drivers for a large number of printers, but only one generic driver for laser printers. *WordPerfect* offers many more drivers both for laser and other types of printers. Fortunately it worked well enough with my Mannesmann Tally 910's emulation of the HP Laserjet+.

The program offers several other applications, including a spreadsheet compatible with *WordPerfect*'s companion product *PlanPerfect*. There is also a telecommunications module, a filer, and an appointment calendar. Applications are accessed through a shell that provides functions for the user without requiring intimate familiarity with DOS.

Remote-Application Control

Aside from offering portability for its own sake, there are actually new applications that are opened up by a truly portable machine if it retains a substantial portion of a desktop machine's power. One of these applications is the ability to operate systems remotely from a laptop, in the field, or from a branch office or home. The user could conceivably update a database from a commercial airliner. At the very least, the database might be accessed for price lists, perhaps to make an unexpected sale, without the assistance of anyone at the host site.

Carbon Copy is a program which allows the use of a local machine to operate a remote system. I was able to use this product to run several applications, including *Lotus 1-2-3*. Everything is controlled from the local machine and functions just as if the user was at the remote keyboard. The major difference is that any operation which requires the display of information on the console will have to display it twice, once locally and again remotely. The speed of the telecommunications channel, a modem for instance, will severely limit the speed of these transactions.

Display of information is not only slowed down, there is also a lag before it is displayed. A local directory listing can lag far enough behind a remote listing that it scrolls off the screen before becoming visible. Using Ctrl-Num Lock can temporarily pause the display long enough for the refresh to catch up. Directory listings on the 9.54 MHz. machine were slowed to a very slow rate of about one line per second by the combination of the software and a 1200-bps data link. Other functions, which take place largely at the host, are less affected. A file COPY takes about as long as usual.

Aside from offering portability for its own sake, a truly portable machine opens up new applications if it retains a substantial portion of a desktop machine's power. One such application is the ability to operate systems remotely.

Setting *Carbon Copy* to work can take some time. While it is not copy protected, it does require that two copies of the program be used. Each copy has a serial number, and the program checks to verify that they are different. There are also several factors which must be considered as with any telecommunications software that is used with a modem. *Carbon Copy* makes this setup particularly difficult because a separate installation program must be run to change ports, telephone numbers, transmission rates, and several other parameters.

Once all of the compatibility issues are solved, the program will work fine for that environment, but it may be necessary to repeat the setup if equipment is changed. The program can also be used with a null-modem cable. However, I was unable to successfully connect any of three machines (the Spark, Multispeed, and Vendex Turbo 888-XT) by cable alone. While some users might be discouraged by this failure, I take some solace in the inability of a technician from Meridian (*Carbon Copy*'s publisher) to connect either of these to laptops or a Zenith 181 by cable a few days earlier. My guess is that the problem is cable related, although I did try both a simple cross-over cable and a full-handshake null-modem cable.

One thing that I like about *Carbon Copy* is its use of special drive designators for performing data transfers between machines. Most migration software uses a convention of menus or simply adds a second machine's drives to the local complement. Thus, drive A: on the host may become drive C: on the local system. Confusing!

Carbon Copy affixes a prefix of H for the host or L for the local system. Drive A: on the host is clearly available as HA: It would be nice if some of the other programs which operate systems remotely, *Brooklyn Bridge* for instance, could adopt this method.

Since Datavue did not include the optional modem with this machine, I was forced to use an external device. The Pocket Modem from Migent is ideal for this application. It is about the size of a package of cigarettes, is powered by a nine-volt transistor-radio battery and attaches directly to the serial port with built-in thumb screws.

Memory Expansion

Many laptops do not have hard disks. Few have the ability to add options. Practically none can add an adapter without substantially losing portability. However, there are still ways to incorporate one essential add-on feature: EMS memory.

Spreadsheets continue to be one of the most widely used applications on microcomputers. For many users, the growing size of their spreadsheets has led to the purchase of memory-expansion boards. But these boards pose physical difficulties for laptop users.

There are, however, some software solutions for the laptop user which will provide the EMS memory required by *1-2-3* and other programs. One of these is *Above DisC*. Installing *Above DisC* allows programs, designed to use expanded memory (EMS), to use a hard disk drive, AT-type extended memory, or even floppy diskettes as firtual, or paged, memory.

I have used *Above DisC* in the past to convert extended memory on my IBM AT into expanded memory, and the performance was quite acceptable for most tasks. On a laptop with a hard disk, performance might also be suitable for a variety of jobs. However, when forced to employ floppy disks, the user will be well advised to limit applications to the essential. The speed of floppy-based EMS is unacceptably slow except in an emergency. Then, if you happen to be searching a large database of antidotes, just start praying instead.

Some applications will work better than others in these sparse-resource situations. *Lotus 1-2-3* is slowed down many times when forced to access the paged memory space. A large copy or save to another diskette can take several minutes while the media-based data thrashes in and out of memory.

Another limitation imposed by EMS software is its own overhead. The real memory available for *1-2-3* was reduced from 448,864 to 360,688 bytes to gain 720,544 bytes of EMS memory.

Other applications may not run on floppies at all. *SuperCalc4* may fail to work if used in its overlay mode. This is due to the lack of diagnostics in the *Above DisC* which can signal the user when a disk change is needed. If one diskette is dedicated to the largest possible memory (the only sensible configuration when there is a maximum of 720K available) and another contains a large file (if it were small, EMS wouldn't be necessary), then, there is no drive available for transferring *SuperCalc4* overlays into memory.

Using *Above DisC* on a laptop entailed some special preparation due to my inability to read the 3.5-inch microdiskette that developer TeleWare West provided. For some reason, two attempts to send me a 3.5-inch copy of the software both failed. Neither the Multispeed nor the Spark was able to read the diskette although I tried two machines, at two speeds each, with three versions of DOS. Finally, I used the *Brooklyn Bridge* to transfer a copy from a 5.25-inch minidiskette to the microdiskette. TeleWare West is planning to make *Above DisC* available for laptops and the PS/2, so, those problems should be solved by the time this appears in print.

Conclusions

Laptop portables are fun to use on the road and their attraction is sure to grow as they fall even further in price. But, though they certainly beat the alternative (no PC), they are a long way from perfection. Part of the reason is that this is an area in which IBM has not assumed a strong leadership position. Because the Convertible was a weak entry (despite whatever success it enjoys as a product), the competition in the market has not been strong enough to force laptop machines to excel. Only among elite machines like the Grid and Toshiba T3100 does one expect to see all of the *t*s crossed and *i*s dotted. ☐

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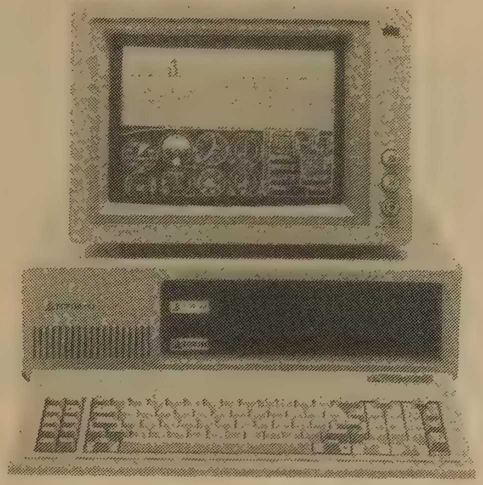

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From The Land Down Under: Tracker

By David Batterson

Most of us have seen or used desktop organizer programs, which include a calendar/datebook, electronic notepad and a calculator. The problem with these organizers is that they fail to live up to their promise. They look good in the manual and have spiffy screens, but usually are not very practical. After playing with them a few hours, we toss the disk into the back of the storage tray, along with *Tune Trivia* and *PC-Dial*.

From the wilds of Melbourne, Australia comes a new contender called *Tracker*. The name derives from the Aboriginal tracker who "can track anybody or anything over any terrain," says the manual.

The best test for a reviewer is: will I use this software after I finish the evaluation, or does it join the ranks of *Pong*? The second question is simply: does the program deliver the goods?

After spending many hours with *Tracker*, I have to answer yes to both.

Tracker is referred to as the "Interactive Filing and Prospecting System." But it is not just another ho-hum electronic address file. No one is going to buy those anymore!

Installation

Before looking through the features, let's look at the easy installation. Often you have to create CONFIG.SYS and AUTOEXEC.BAT files for new software. (Many of us know how to do this, but for the newcomer it can be a pain.)

These terms do not even appear in the manual. You simply format your disks, making your program disk a bootable one if you prefer, with the FORMAT B: /s command. To install, you type a word that sounds like a metal shack: TINSTALL. Follow the onscreen instructions and you're done. Setting up for hard disk is even quicker.

You can go ahead and run *Tracker* at this point to get familiar. But it is best to run the setup, with the easy-to-remember name of TSETUP. (These Aussies don't like computerese, I can see. Good for them.)

This is where you select screen type, printer, data filenames, and so forth. The default settings will work in most cases. For Auto-Dial, it defaults to 300 baud, so most will want to change that to 1200. And No parity, 8 data bits, 1 stop bit settings will work for most users.

One setting is very important or the Auto-Dial will not work: either Parallel or Through Modem. The manual is confusing in this area. I set my system for Through Modem (phone plugged into modem; modem connected to wall). This didn't work.

I switched it to Parallel (phone and modem connected directly to wall) and it worked. This did not make sense because my setup is through the modem, *not* direct. But I had no further problems. So just try both settings.

You can run *Tracker* as memory-resident or non-resident. If you want to use it as a pop-up program that you can access while running your spreadsheet or word processor, you have to put it into memory. I recommend this setting; otherwise you have to keep running the program every time. You pick a key of your choice, which is used with the ‹Alt› key to access it.

The manual does have a caveat: "*Tracker* may not work with all programs when it is in memory resident mode." This is because some programs like *Lotus 1-2-3*, etc., are memory hogs. You'll have to test it with these.

Another option to change in the setup is Field Names. For now, leave it as is. You can customize this later to your particular needs. Hit the End key, and your new setup is saved to disk.

Type *Tracker* at the A› and let's look at what it can do.

Operation

Everything is menu driven. You highlight your choice with the cursor arrows, and select one. Start by inputting names and addresses, with Insert-new, or just type I (it works faster). When done, hit End, and insert the next one. No problems!

Thorough onscreen help is available with the F1 key. Now you'll want to enter notes — comments or data on the individual customers or clients in your database. They are dated automatically with today's date. (While writing this, I received a phone call; I hit Alt-T and added a note to a publication I write for. Then End, and back to writing!)

Tracker grows with you, and has many sophisticated features, some of which you may not ever use. For instance, you can print reports on companies (selected by keywords), print mailing labels and phone lists, and create a data file for mail merge for your particular word processor (seven popular types included).

> **Tracker grows with you, and has many sophisticated features. You can print reports on companies, print mailing labels and phone lists, and create a data file for mail merge for your particular word processor.**

Remember the field names in TSETUP? Now you may want to change these. For instance, the main menu has "company name." I changed that to "publication," and "product" to "subject matter." Customize it any way you want. There are many suggestions in the manual. You can change it to a project planning screen, or one for personnel records. A receptionist could use it to log phone messages (which can be printed out later).

A few minor flaws: the manual's mail merge explanation uses an Australian address format, and should be rewritten for U.S. usage, i.e., city, state and zip all go on one line, not two. In the notes section, you cannot enter a quote (") and must type instead.

When you first run *Tracker* each day, you must hit the F5 key to see what appointments/contacts you have that day. An improvement would be for this to do so automatically.

A free demo disk is available for those interested in *Tracker*. The minimum requirements for using the program are: PC-DOS/MS-DOS Version 2.0 or later, 256K RAM, two floppy disks or hard drive, monochrome or color monitor, Hayes-compatible modem (to use the phone dialer) and your own printer and word processor. As the generally well-written manual says: "Warning: *Tracker* is addictive." (*Tracker* Version 2.0; $99 suggested list price, not copy protected. Adaptive (USA) Inc., 3701 Birch Street, Newport Beach, CA 92660; 714/852-1467.)

David Batterson is an independent writer in Los Angeles who writes for various computer publications. He can be reached via MCI Mail: DBATTERSON. Copyright 1987 D.W.B.

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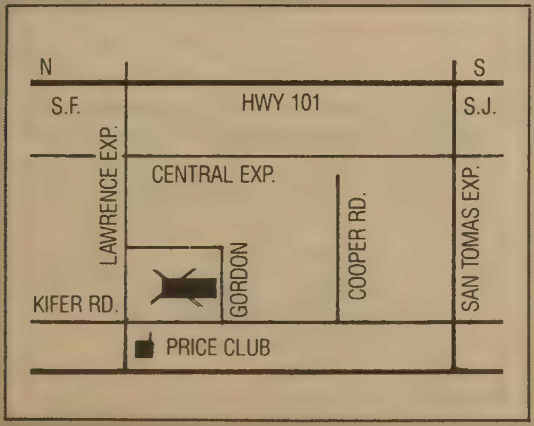

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Adobe Illustrator

You Don't Have To Be An Artist To Love It

By Mary Eisenhart

When the Macintosh arrived on the scene a few years ago, its graphics capabilities were among its most mind-boggling features. However, as serious users soon discovered, the available graphics had severe functional limitations.

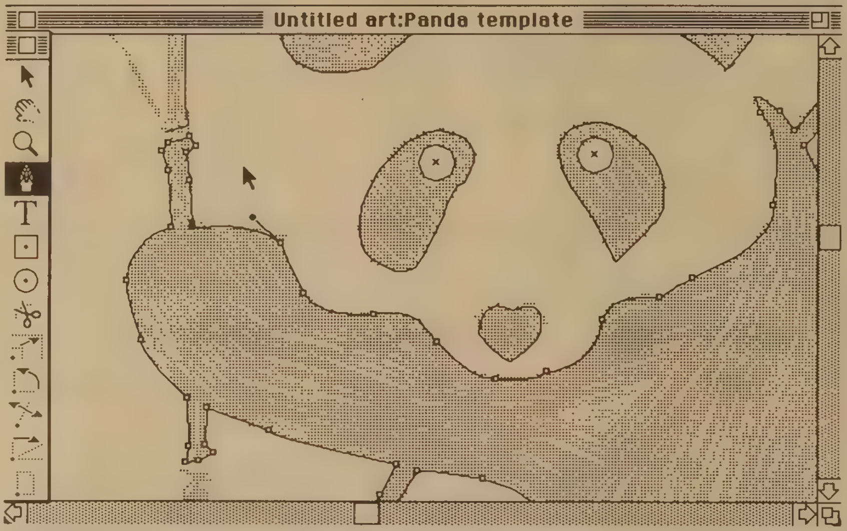
Using the Mac with various software and peripherals, artists could create freehand art, capture screens as *MacPaint* files, and scan hard-copy art into *MacPaint* files. Unfortunately, the results were WYSIWYG in the worst sense — what you saw was, in essence, what you were stuck with. Since the graphics were bit-mapped, they weren't particularly easy to work with, as anyone who's ever tried to edit a badly-scanned file in FatBits can attest. Enlarging and reducing bit-mapped graphics is cumbersome at best, and the best resolution supported was the LaserWriter's 300 dpi, even if the graphic was part of a page being output on a PostScript-based typesetting machine with far superior resolution.

Object-oriented graphics programs such as *MacDraw* and *MacDraft* deal with problems of sizing and the like more effectively. They also support the best output of which a device is capable, but are severely limited in their ability to handle curves and irregular shapes.

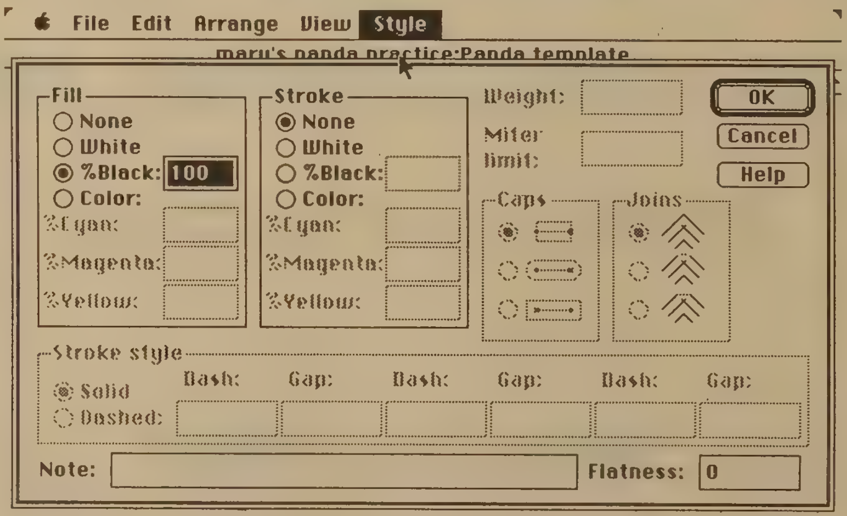
Adobe Illustrator, a powerful PostScript-based graphics package, addresses these limitations very effectively. Its price tag ($495) probably puts it out of the range of the casual user, but if your work involves extensive use of scanned or other bit-mapped art, if you use a variety of PostScript-based output devices, or if you need to change the size or composition of graphics files often, you owe it to your sanity (and productivity) to check out *Illustrator*.

Why PostScript?

PostScript is Adobe's proprietary page description language, which previously was most in evidence in type fonts. The beauty of PostScript, as applied to graphics, is that it defines each line in your artwork mathematically (instead of as black or white pixels), so that, as long as you're using a PostScript output device, you get the best resolution the device supports. You can also preview your work on a non-PostScript, but definitely cheaper, ImageWriter.



Using an imported bit-mapped file as a template, Illustrator lets you create a PostScript-based graphic by drawing lines around the contours of the original art.



Fill: ○ None ○ White ● %Black: 100 ○ Color: %Cyan: %Magenta: %Yellow:

Stroke: ● None ○ White ○ %Black: ○ Color: %Cyan: %Magenta: %Yellow:

Weight:

Miter limit:

Caps: ● ○ ○

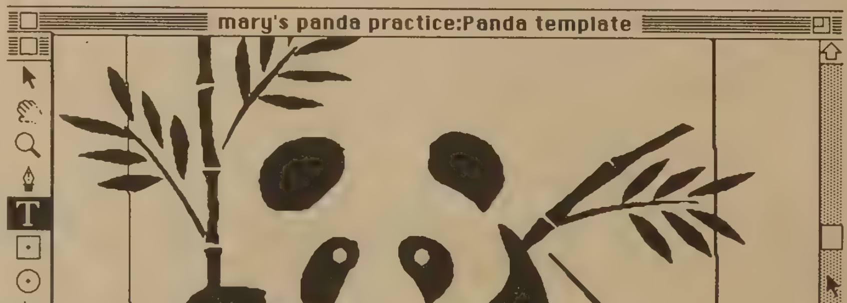
Joins: ● ○ ○

Stroke style: ● Solid ○ Dashed: Dash: Gap: Dash: Gap: Dash: Gap:

Note:

Flatness: 0

Once you've drawn the lines, you choose paint colors and patterns to fill the defined areas. Illustrator offers a full range of options for fill and outline strokes.



At this stage, it's a good idea to preview your work to eliminate surprises and make sure all areas are properly defined and painted.

While *Illustrator* can be used as a freehand drawing tool, this is not its particular strength. It excels by giving you the ability to convert existing graphics (either *MacPaint* or PICT format) into something you can easily customize to your particular needs. Adobe sends you two Gallery disks of art ideas for starters when you mail in your registration card; you can also use files in clip art software or screens you've created in other applications as a foundation for *Illustrator* documents. Nor are you limited to software-based art; *Illustrator*'s use of PostScript means that, if you have a Mac and a scanner, you can take any art that exists in print form and convert it very rapidly into something you can actually work with. And, since you're essentially tracing existing art rather than creating it from scratch, you can get very impressive results in minutes instead of hours.

Creating Illustrator Documents

If, in your youth, you spent any time with connect-the-dot pages in coloring books, *Illustrator* will seem familiar almost immediately. However, make no mistake — *Illustrator* is a powerful and fairly complex package, and you should plan to invest some time learning it. The screens include rulers for precision and a complex tool palette, both of which can be hidden for more drawing room. Probably most unnerving for the new user, *Illustrator* makes extensive use of the command, option and shift keys in combination with other keystrokes and mouse commands to perform various functions; eventually this becomes second nature, but your first few sessions will probably involve frequent reference to the manual for the proper incantations (Adobe, mindful of this problem, supplies a quick reference card listing the combinations and their functions).

When you import an image into *Illustrator*, it appears as a gray form, called a template, on your screen. Using *Illustrator*'s tools, you define

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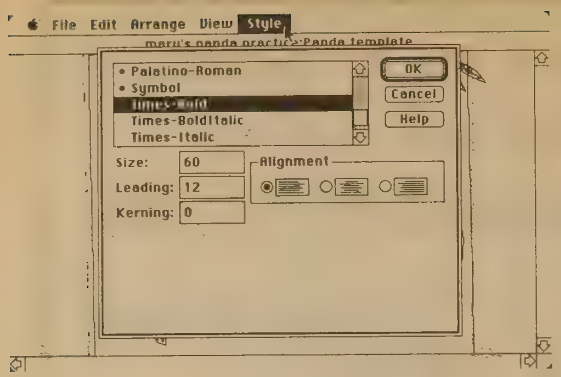
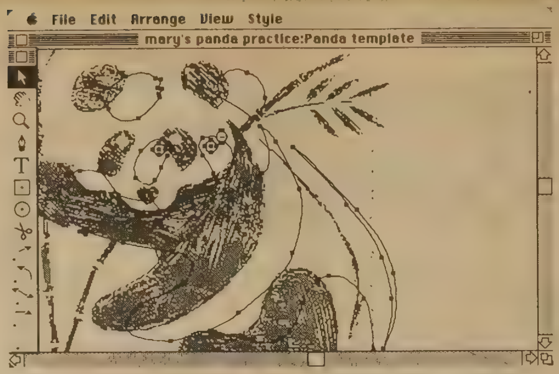
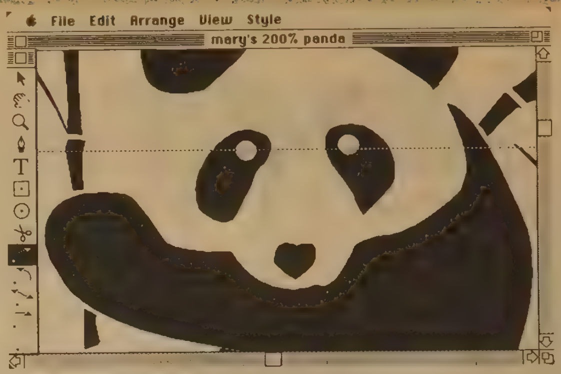


Size: 60
Leading: 12
Kerning: 0

Illustrator also lets you place type anywhere in your drawing, and offers flexible leading and kerning options.



For convenience, a portion of your art can be selected, grouped, and moved out of the way. Putting it back can be unnerving, because response time is slow and there's a noticeable lag between mouse and screen movements.



Illustrator also lets you enlarge or reduce your illustration as needed, with no loss of output quality because the PostScript-based art is mathematically defined.

the shapes on the template by drawing a series of lines around them. At first this is a little awkward, between remembering the various mouse and key functions and dealing with the initial tendency of curves to run amok (the tutorial, for reasons best known to itself, waits till you're several sessions along before it tells you how to turn corners — i.e., make Curve #2 independent of the slope of Curve #1 — a bit of knowledge that would have saved a good deal of heartache and grief in the early lessons). Using the Zoom function, you can enlarge or reduce the template for better control.

Once you've defined the shapes, it's time to paint them. The paint menu offers many options — gray scales, black, white, and color (which will appear as shades of gray if your printer doesn't support color output). You can define the fill color as well as the color and width of the lines defining the shape (called "stroke"). You have considerable control of the appearance of the lines — not just point size and color, but also whether they're solid or dashed, and the appearance of corners and caps. Design elements can be layered, using different color fills and the Paste In Front/Paste In Back options.

For the sake of convenience, different parts of your graphic can be done separately. In the case of the example in the tutorial, the panda was done first, then selected, Grouped, and moved to the side to make the bamboo portions more accessible. Moving the image back onto the template is more unwieldy than it ought to be — the number-crunching required to move those graphics around as a unit slows response to a crawl, so that (at least with a Mac Plus and a hard disk) what's happening on the screen is several seconds behind what's happening with the mouse. It's necessary to stop periodically and let the screen chaos of multiple images subside so you can see the results of your mouse movements. (This was the only real performance problem I encountered, however.)

If you'd like to have some text with your graphic, *Illustrator* lets you place type anywhere in the work area. You have a choice of PostScript-compatible fonts in a wide range of sizes and faces (and if you don't have the font you need, Adobe has an extensive range of downloadable fonts for sale). You can also specify leading (the amount of space between two lines) and kerning (the space between two letters).

Once drawn, images can be duplicated, rotated, reflected and sheared (transformed into a diagonally-skewed image of its former self), either by dragging and clicking with palette tools and mouse or by specifying the appropriate angles and percentages in pop-up dialog boxes.

Also, and perhaps most useful, they can be scaled — reduced or enlarged to fit your requirements. Again you can achieve this by dragging or by specifying the percentage of enlargement or reduction. Different versions and sizes of the artwork can be saved separately for later use.

Be forwarned, however, that if you save a billboard-sized version of your artwork, you're going to have an interesting time trying to print it. *Illustrator*'s work area is 1008 x 1008 points, or 14 x 14 inches — which bears little resemblance to any paper size your printer is likely to accommodate. *Illustrator* subdivides (or "tiles") the image into pages conforming to the ones you specified in Page Setup. For instance, when the one-page panda image was enlarged 100% and printed, the result took eight pages.

Images can be placed in documents generated by other PostScript-based applications such as *PageMaker* or *XPress*. Because your image is PostScript-based, its quality will be the best your printer allows.

Comments

Whether you're an artist or a user who needs to use graphic elements in your work, you'll probably find *Illustrator* a godsend. Since it's fairly command- and terminology-intensive, you should expect something of a learning curve, particularly if you haven't spent much time with painting or drawing programs. However, the transition from hair-tearing to wondering how you got along without this product is fairly rapid. Once you're over the too-many-things-to-remember-at-once stage, you'll probably find that *Illustrator* opens up all manner of possibilities for enhancing your work.

In theory, you can use *Illustrator* with a Mac Plus and no hard disk. Practically speaking, unless you've got time on your hands and the patience of a saint, you need a hard disk and as much memory as you can get.

The *Illustrator* package comes with a program disk (copy protected, but Adobe sends you a personalized non-protected disk when you send in your registration card), a tutorial disk, and a videotape to introduce the user to the program's revolutionary capabilities. It also includes quick reference cards and an excellent manual. All in all, this is a well-conceived and well-executed package, and highly recommended. □

Adobe Broadens Its Horizons

"What software product have IBM, DEC and Apple all adopted?" rhetorically asks Jim Willis, Adobe's National Sales Manager. The answer — PostScript, of course.

Since its foundation five years ago, Adobe has done most of its business by licensing PostScript to OEMs of output devices. PostScript has become an industry standard, highly attractive to big-business customers because it offered a hardware-independent platform.

Last year, however, Adobe began marketing PostScript-based type faces, licensing them from their original vendors and distributing them to both OEM and retail customers. Says Willis, "We've become a typeface clearinghouse. We take other people's type faces, trace them with our technology — we spend many months on each typeface to make it as perfect as possible — and once they're done, they'll either go on ROM chips with PostScript in some of the OEM relationships, or they become downloadable typefaces, which we take to the retail marketplace."

Last year, software sales amounted to approximately $1 million. This year, thanks to the success of the *Adobe Type Library* and *Illustrator*, released in March, software is expected to amount to 30% of the company's estimated $37 million in earnings. The company now consists of two divisions — the OEM division, which continues to sell PostScript to manufacturers of output devices, and the software products division.

While historically Adobe has dealt directly with retailers, and will continue to do so with those who wish it, it's recently broadened its marketing approach by concluding distribution agreements with Softsel and Bonsu, two of the leading software distributors in the US. Additionally, while most of its dealers in the past have been Apple Authorized Dealers, Adobe is expanding its strategy to include not only IBM retailers but also software-only stores. However, says Willis, "Historically, it's not our policy to sell through mail order," largely because of the company's sense that it's not possible to offer adequate customer support through that channel. At the same time, Adobe has assembled a national direct-sales force capable of serving both corporate and retail accounts.

One fact that endears Adobe products to potential dealers is that they drive hardware sales. Willis cites the results of a recent survey of registered users: "Almost half the people who bought *Illustrator* bought hardware at the same time. Ninety-four percent of them had a scanner. Only 16% of those felt they needed a scanner to use *Illustrator*, but they felt it was such a productivity tool, that kept them from having to do all that freehand work.

"From a dealer's point of view," he adds, "that's exciting news."

As for what's on the horizon, Willis says discreetly that the company's examining its options. Certainly the DOS world is a new frontier for Adobe, and the advent of PostScript-based color printers is expected to have a dramatic impact.

In the meantime, he says, "Our strategy is that whatever we come out with, it's market-leading technology. We're not a me-too company." (Adobe Systems, P.O. Box 7900, Mountain View, CA 94039-7900, 415/961-4400.)

— Mary Eisenhart

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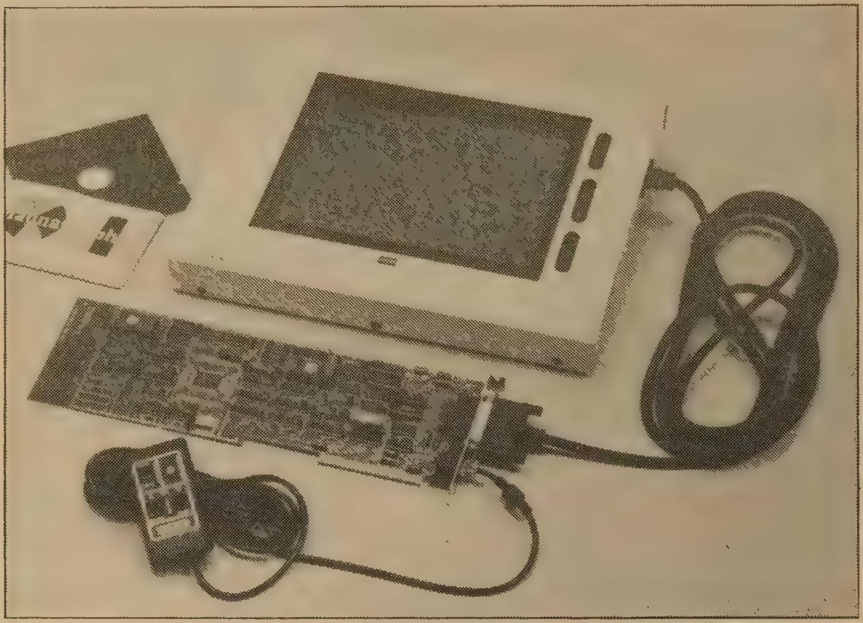
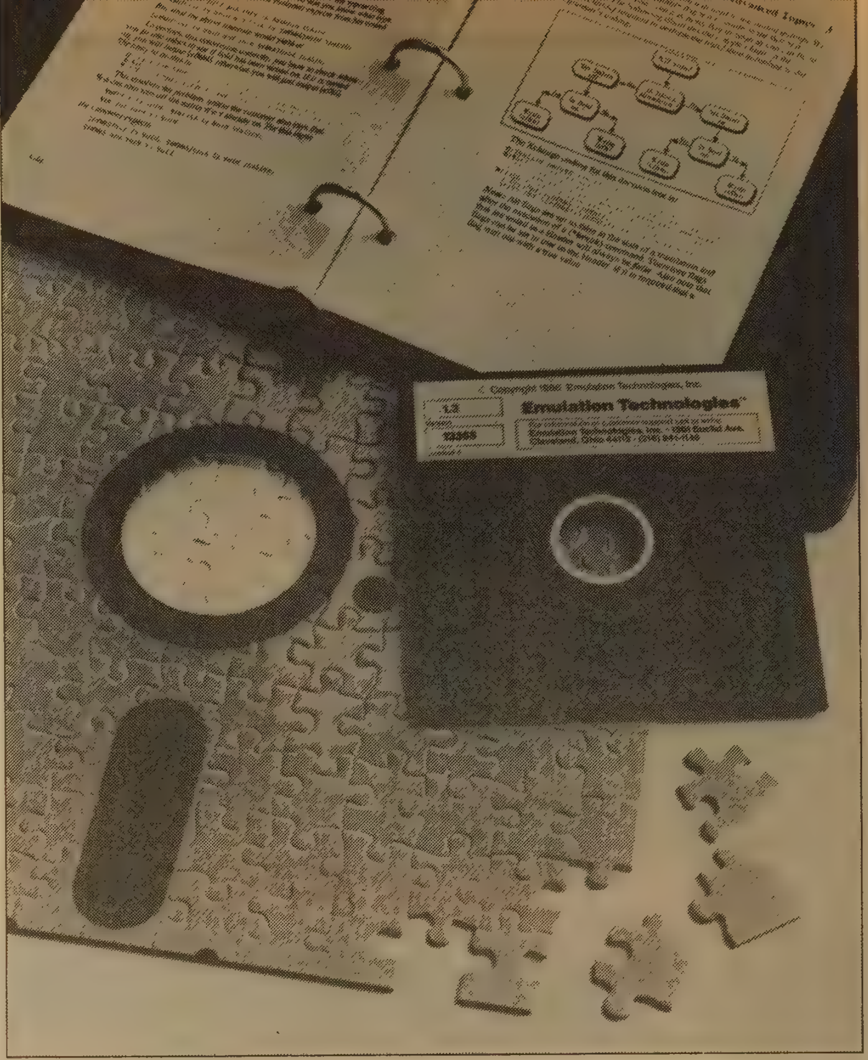
The MagnaByte 5220-I is a color liquid crystal computer image presentation system that allows you to use an overhead projector to display your computer screen on the wall. The system includes an LCD palette that fits on top of any standard overhead projector, an interface card which inserts into a personal computer and a hand held remote control. MagnaByte allows the computer to display real time information and processes, from spreadsheets to product demonstrations, to a large number of people. Available in monochrome for IBM, compatibles and Apple II computers. ($1, 292) And in color for IBM and compatibles. ($1,580.) Telex Communications, Inc., 9600 Aldrich Ave., So., Minneapolis, MN 55420. (800) 328-5727.





Xchange Makes Sending Copy Off To The Typesetter Easier

Xchange from Emulation Technologies is a software package that provides "no-hands" document markup for desktop publishing and typesetting. *Xchange* recognizes the formatting native to a word processor and responds to it by producing a document marked up for virtually any page description method used in desktop publishing. As a typesetting tool it can convert word processor formatting codes directly into the appropriate markup or command codes for several computer typesetting systems. It can also convert information from any file format or data type into nearly any other file format or data type. ($495) Emulation Technologies, Bulkley Building, Lower Level, 1501 Euclid Ave., Cleveland, Ohio 44115. (216) 241-1140.

WonUnder Adds An Expansion Card To Your Toshiba T3100 Laptop

The WonUnder is a single card expansion unit for the Toshiba T3100 portable computer. It allows any 2/3 or smaller sized card to be mounted on the bottom of the laptop. The WonUnder includes a sturdy metal card carrier and an interface card that plugs into the T3100's expansion port. It supports network interface cards such as Arcnet, Ethernet, Proteon and Starlan. It also provides support for mainframe terminal emulation cards such as the CXI 3278 coax card. The WonUnder has the same gray color and finish as the Toshiba and fits in the laptop's cloth carrying case. ($349) Connect Computer Company, Inc., 9855 West 78th Street, Suite 220, Eden Prairie, MN 55344. (612) 944-0181.

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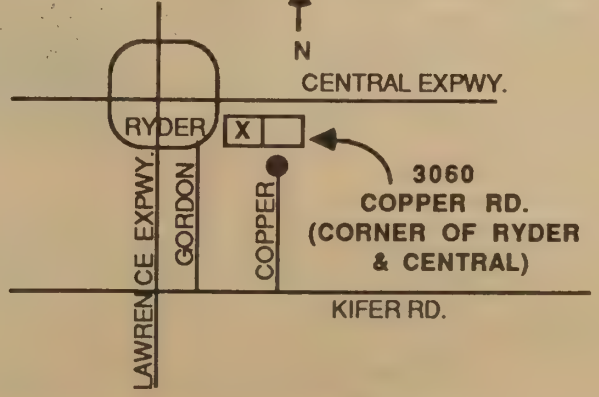
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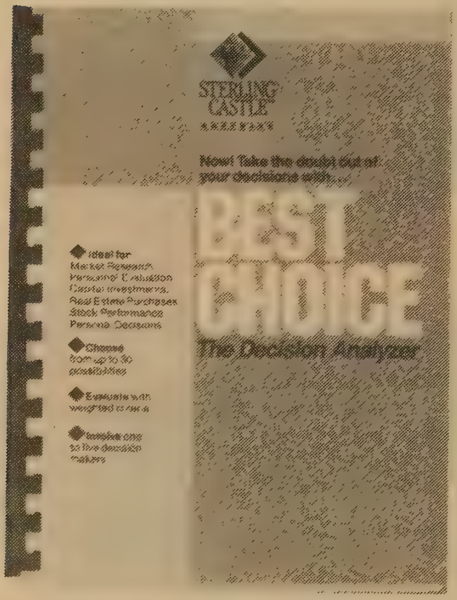
The Diskmaster/4 from Disk Storage Technologies is a disk duplicating system that allows you to make large numbers of flawless copies with your PC and four off the shelf disk drives. The system includes a board, four cables, and software to copy standard DSDD 5-1/4" or 3-1/2" diskettes.

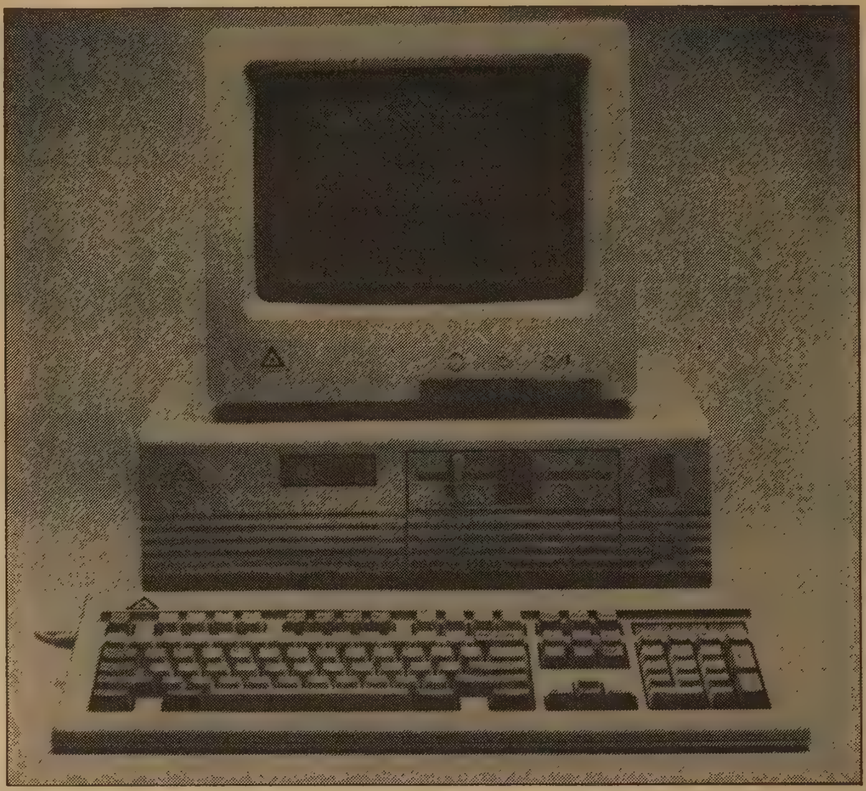
DISKMASTER/4

It may also be purchased with four 5-1/4" or 3-1/2" drives, case and power supply. Expansion to eight drives is easily accomplished by adding another Diskmaster/4 and four more drives to copy 400 disks per hour. Custom software is available and recommended. Prices start at $1,495. Disk Storage Technologies. 333 Cobalt Way, Suite 107, Sunnyvale, CA 94086. (408) 735-7662.



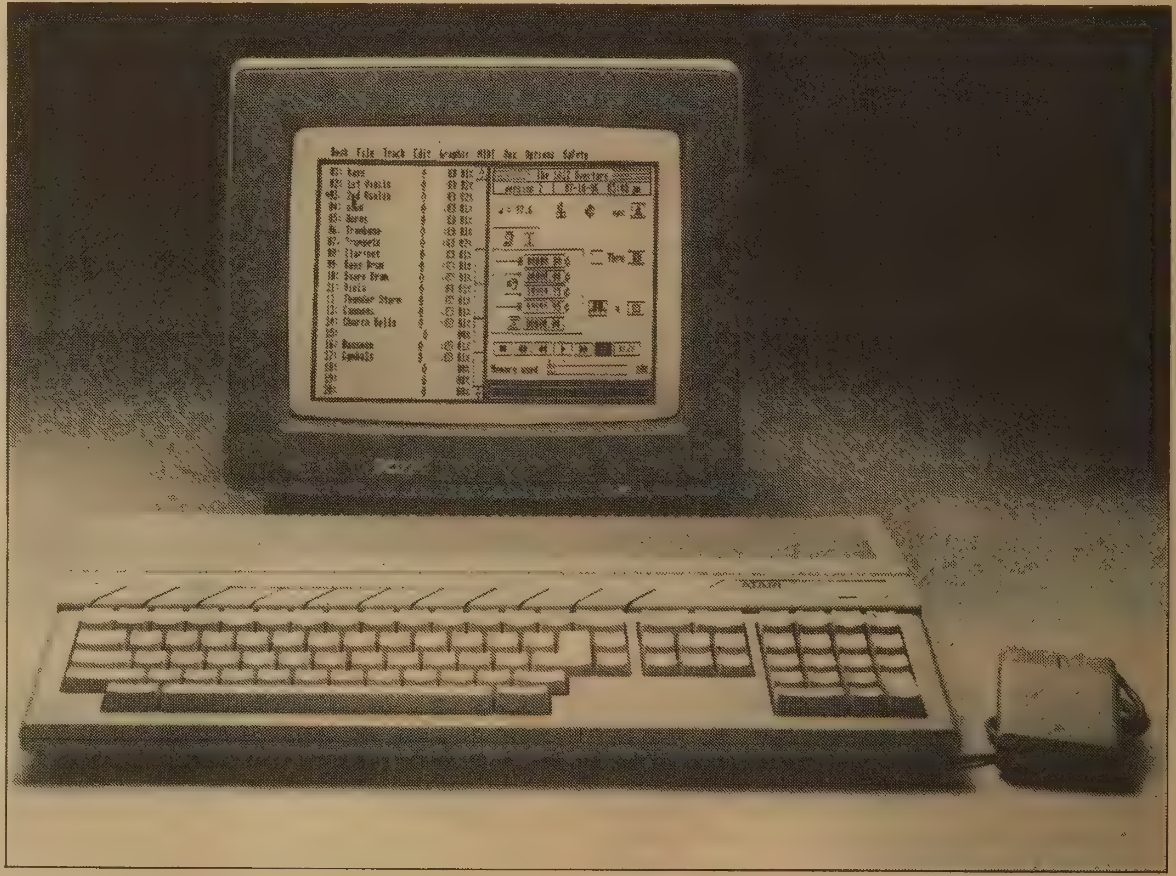
Sterling Castle Helps You Make The Best Choice

BestChoice from Sterling Castle Software is a decision analyzer that can provide conclusions for problems ranging from where to take the family vacation to which capital investments to make. A mathematical algorithm lets *BestChoice* simplify an intricate problem with up to 30 possible outcomes into a series of pairs. These pairs are then individually evaluated by one to five decision makers using up to five criteria with relative weighing. *BestChoice* statistically ranks each choice in percentage order from best to worst and gives you supporting calculations. Introductory price of $49. Sterling Castle Software, 702 Washington Street, Suite 174, Marina del Rey, California 90292. (213) 306-3020.



Leading Edge Offers Low Cost AT Clone

The Model D2 Leading Edge computer is a fully compatible PC-AT unit. The Model D2 includes a high resolution monochrome monitor with enhanced graphics adapter, a 101-key AT-style keyboard, plus DOS 3.2 and GW BASIC. It utilizes an 80286 microprocessor and comes with a standard 640K of memory. It is expandable to 1 MB on the motherboard. The D2 runs at clock speeds of 6, 8 and 10 MHz. It is reduced in size to free up desk space. $1,495 with 1.2 MB floppy disk. $1,995 with 30MB hard disk. Leading Edge Computers. (617) 828-8150.



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The *MidiTrack ST Series SMPTE Track (Professional)* from Hybrid Arts is a software/hardware package of three programs integrated into a full featured MIDI recording system. This package allows you to record MIDI music using the 60 track MIDI recorder, and lock up to SMPTE. It includes a GenPatch Accessory that will load any MIDI instruments with new patterns, samples and patches. It also includes a powerful SMPTE synchronizer which allows your MIDI sequencer to keep up with your tape recorder. ($575) Hybrid Arts, 11920 W. Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777.

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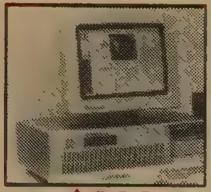

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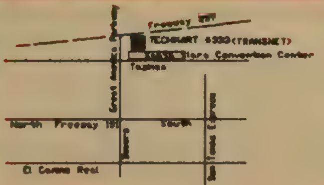

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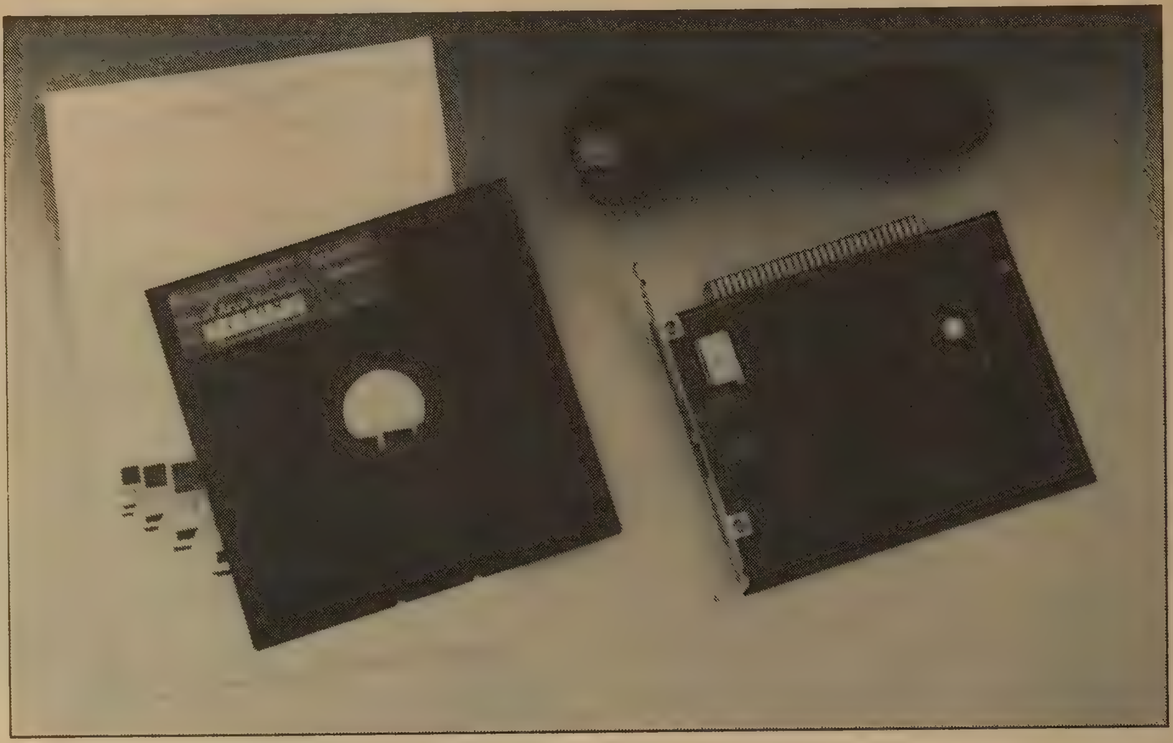

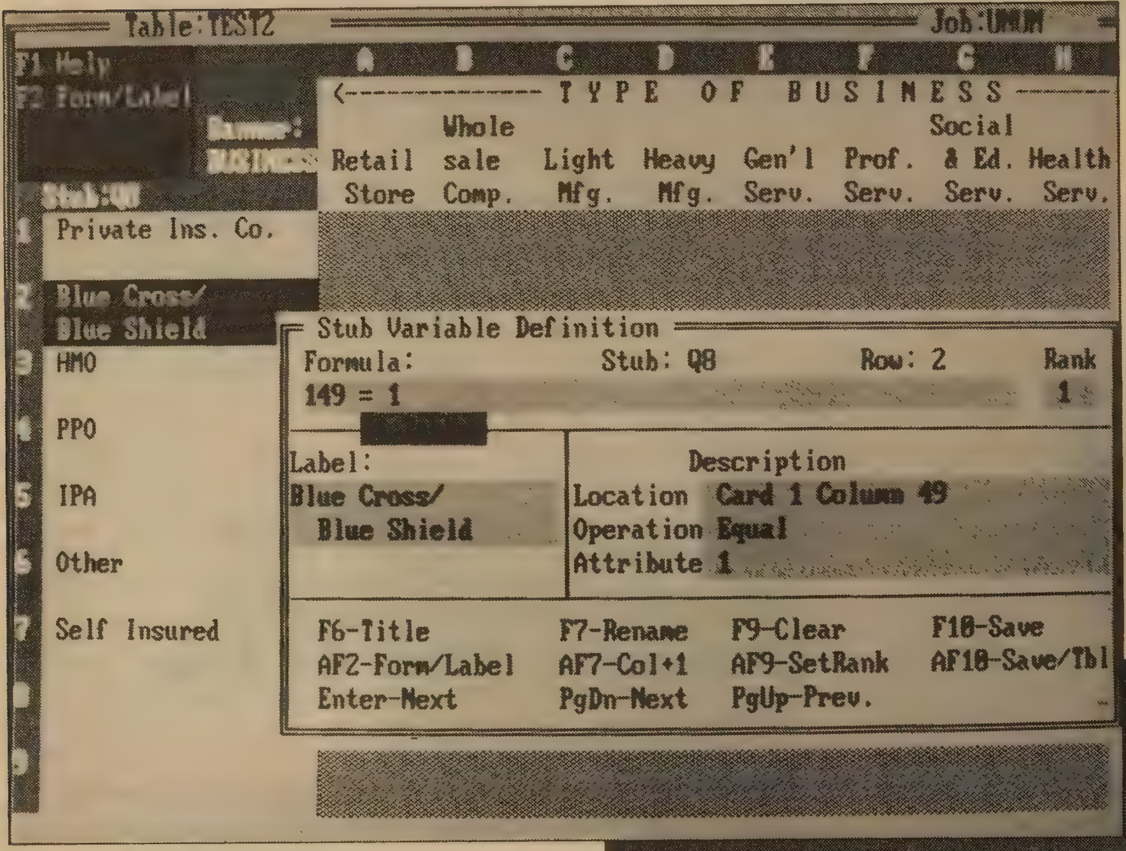

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═══ Table:TEST2 ══════════════════════════════════ Job:UMUM ═
F1 Help                A     B     C     D     E     F     G     H
F2 Form/Label      <------------ T Y P E   O F   B U S I N E S S ----------
           Banner:         Whole                          Social
          BUSINESS  Retail  sale   Light  Heavy  Gen'l  Prof.  & Ed. Health
Stub:Q8             Store  Comp.   Mfg.   Mfg.   Serv.  Serv.  Serv.  Serv.
1 Private Ins. Co.

2 Blue Cross/
  Blue Shield  ═ Stub Variable Definition ═══════════════════════════
3 HMO          Formula:                 Stub: Q8          Row: 2     Rank
               149 = 1                                                1
4 PPO
               Label:            │           Description
5 IPA          Blue Cross/       │Location  Card 1 Column 49
                 Blue Shield     │Operation Equal
6 Other                          │Attribute 1

7 Self Insured   F6-Title          F7-Rename   F9-Clear     F10-Save
                 AF2-Form/Label    AF7-Col+1   AF9-SetRank  AF10-Save/Tbl
8                Enter-Next        PgDn-Next   PgUp-Prev.

9
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A-Cross from Strawberry Software is a data analysis, cross tabulation program that incorporates a runtime version of Quarterdeck's *DESQview*, thus allowing it to do multi-tasking. *A-Cross* can create, compute and print tables all at the same time. *A-Cross* does not require the use of command language. Simple formulas which define variables are translated into English on the screen. Rows and columns are displayed in spreadsheet form as they will appear in finished tables. ($995) A run-time version, limited to a single database, is available for $85. Strawberry Software, 42 Pleasant Street, Watertown, MA 02172. (617) 923-8800.

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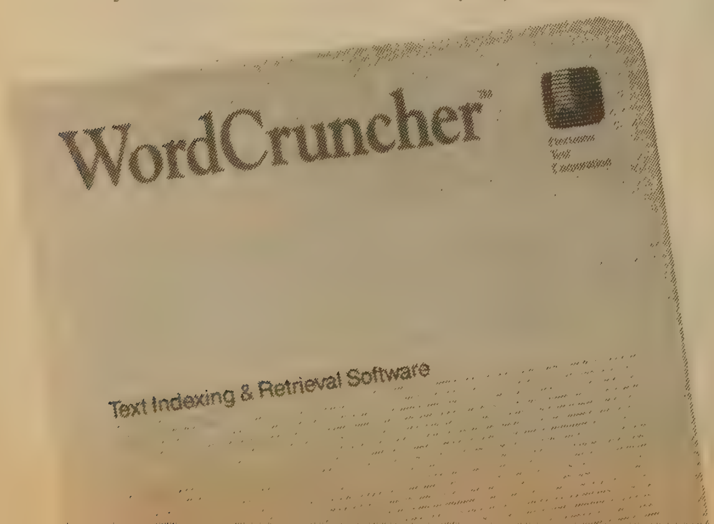
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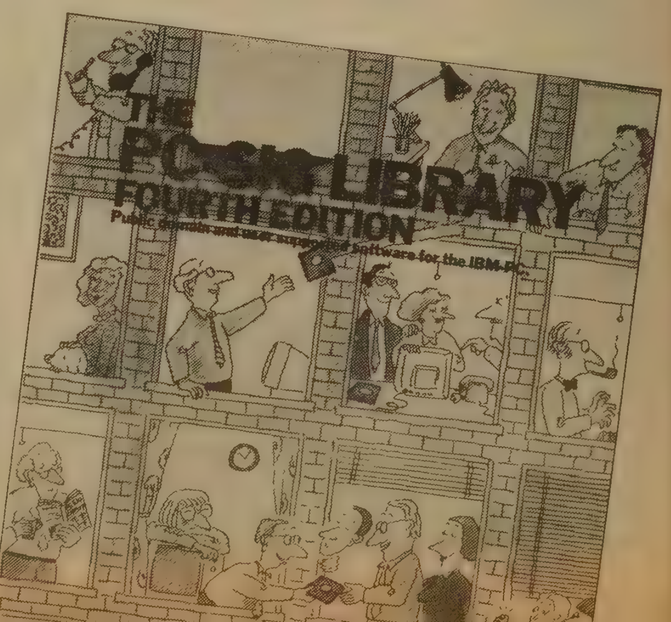
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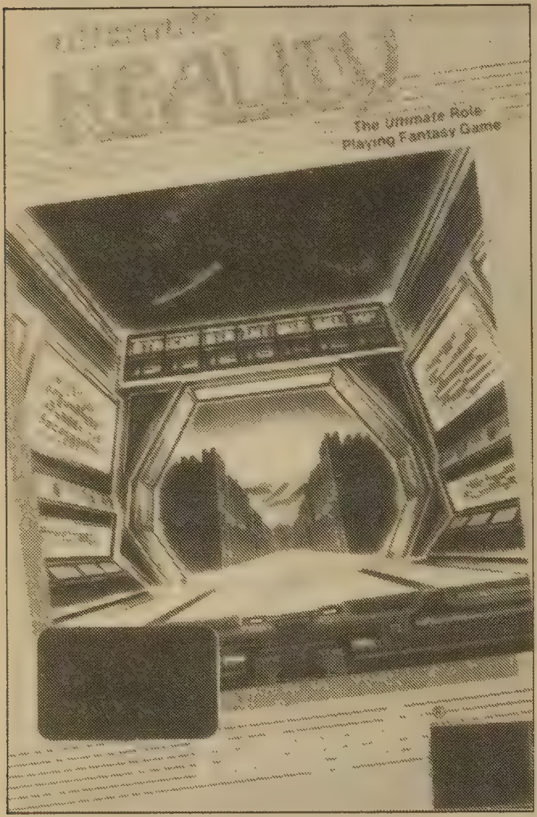

As If Reality Wasn't Enough: Alternate Reality From DataSoft

Two games from Datasoft, *Alternate Reality: The City* and *Alternate Reality: The Dungeon* tests your skills in a foreign but somewhat familiar setting. After aliens have abducted you from everyday life and brought you along on a musical space ride, they deposit you in a room facing either a medieval dungeon or a city. With only one option you set forth to adventure and hopefully find your way out of your predicament. You must make friends and defeat enemies if you hope to survive. For Macintosh, Apple II Series, Amiga, Atari, Commodore, Amiga and IBM. ($29.95-$39.95.) DataSoft, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

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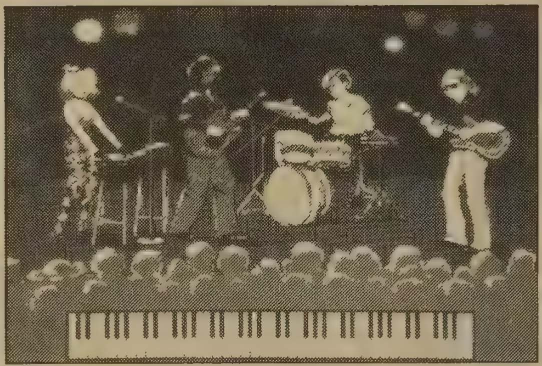
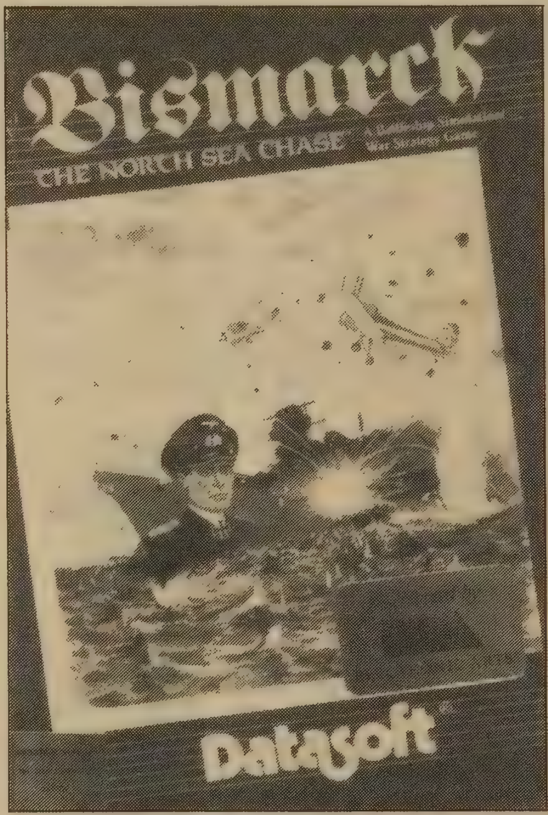
Jam Session from Brøderbund Software is a unique music program in that you don't have to know anything about music to have fun with it. Once you pick a style of music, from rock to classical, along with a song, animated musicians appear on the screen and begin to play. Using the computer keyboard you also begin to "play." Any key you strike at any time provides a riff that fits right in. Each selection was composed by a professional songwriter, so you always sound like a pro. The variations are practically endless, and you can record your music right on to disk and give it to your friends. ($49.95) For the Macintosh. Brøderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101. (415) 492-3200.





Here's Your Chance To Sink The Bismarck

Bismarck: The North Sea Chase from DataSoft combines three games into one to cover all aspects of the famous sea campaign. You can command the battle on a strategy level complete with air reconnaissance screen, weather forecasting and radar search, or you can be on the bridge of a battle ship directing fire at your enemy. To really be in the thick of things you can jump in the cockpit of a Swordfish torpedo plane and make a run on the Bismarck in a cockpit-perfect flight simulator. ($29.95.) For Commodore 64. DataSoft, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

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Force 7 is on its way to rescue a group of humans trapped by hungry aliens, but an accident on board ship leaves only one life-support suit. That means only one member of Force 7 can tackle the aliens at a time. You must decide who to send and when. The members of your team travel through mazes equipped with flamethrowers, grenades and heavy machine guns. *Force 7* challenges you to rescue any surviving humans and get off the planet alive. ($19.95) For Commodore 64. DataSoft, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

Halls Of Montezuma Recreates Marine Corps History

Halls of Montezuma from SSG is a game that spans the entire length of Marine Corps history. It lets you recreate the battles of Mexico City, Belleau Wood, Iwo Jima, Okinawa, Pusan, Inchon and Hue. *Montezuma* incorporates the unique *Battlefront Game System* that gets you playing in only ten minutes. It also contains the comprehensive wargame construction set, *Warplan*, that allows you to create endless variations to historical scenarios as well as letting you design your own original battles. Another feature, *Warpaint*, gives

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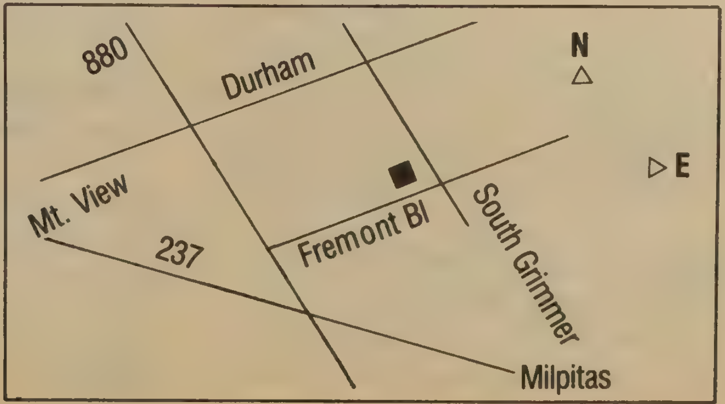

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you control over designing the icon and terrrain symbols used in the game. Shapes and colors can be changed to produce your own special effects. ($39.95.) For Apple II and Commodore 64. SSG, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

Take To The Air In Your Tomahawk

Tomahawk is a real-time flight and combat simulator that re-creates the Army's AH-64A Apache. You're in control of this deadly helicoptor as you fly at tree-top level either day or night. Tomahawk features 3-D display, instruments only flying in bad weather and combat missions using rockets, guns and laser guided anti-armor missles. ($29.95) For Commodore 64 and Atari. DataSoft, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

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THOR THE WARRIOR

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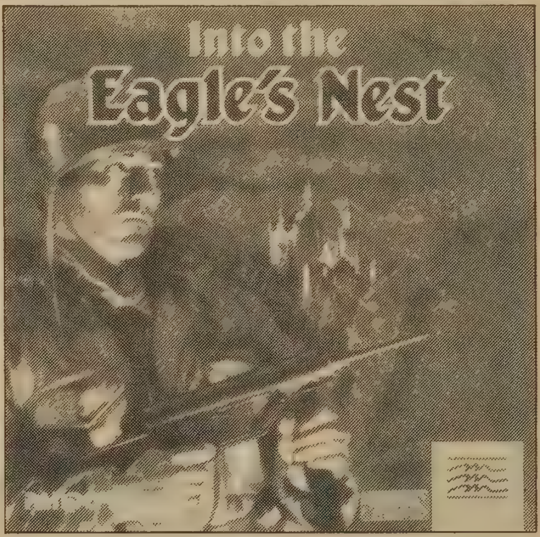

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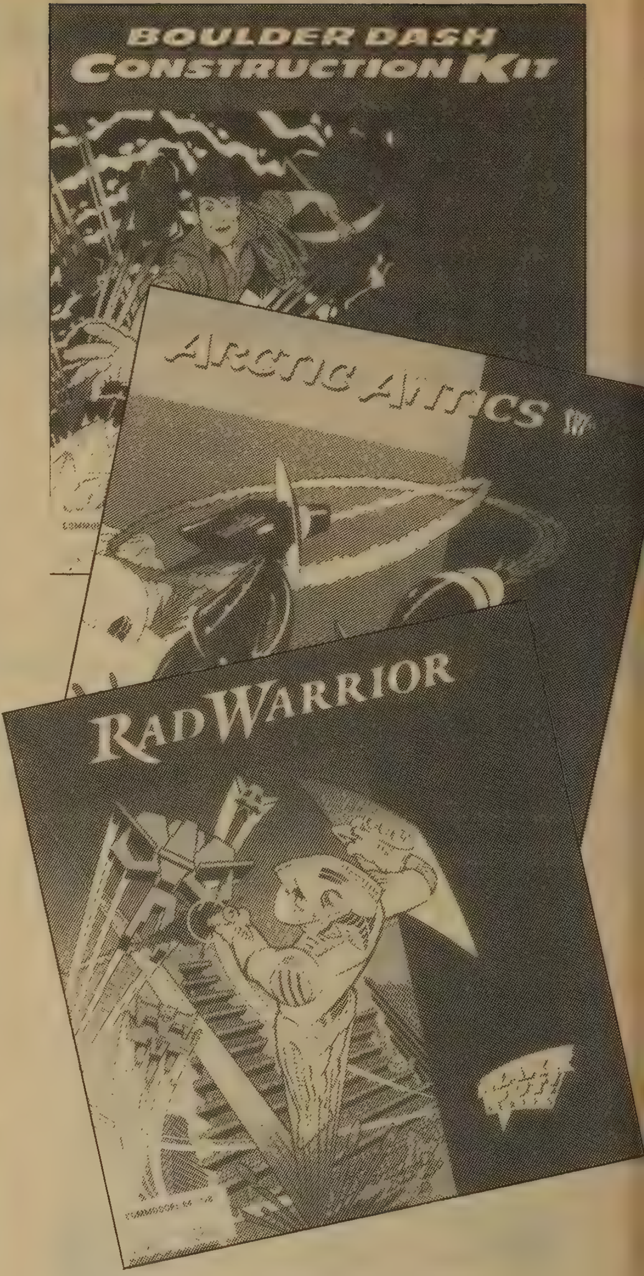
For those who didn't get enough of *Boulder Dash, Boulder Dash Construction Kit* lets you create your own underground mazes full of dangerous stray boulders, amoebas and nasty fireflies. You can make your games as long, short, easy or difficult as you want.If you don't want to construct your own you can go diamond searching in fifteen pre-existing caves. ($24.95) For Commodore, Apple II, IBM and Atari machines. Epyx, 600 Galveston Drive, P.O. Box 8020, Redwood City, CA 94063. (415) 366-0606.



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TELECOMMUNICATIONS

Fast Track Tradeoffs: The Legacy Of 9600-bps Modems

By Brock N. Meeks

When Mike White decided it was time to upgrade his bulletin board system to 9600-bps he ran into one small catch: his BBS is actually a 20-node system with international capability (including a WATS line). And the $1,000 (average) price tag of most dial-up 9600-bps modems didn't help matters.

"Suddenly I wasn't just considering an upgrade," says White, a script writer for the Fox Broadcasting Network, "I was staring down the throat of a substantial investment." So he did what any enterprising sysop would do — he bought 147 9600-bps modems.

White, buying in such high volume, obtained a special deal from US Robotics (USR) on the HST 9600-bps modem. "I figured if I was going to be crazy enough to buy 20 (9600-bps) modems, then I might as well buy all that USR would sell me," he said. "Putting a 9600-bps modem on each node essentially gave me a 9600-bps point to point network. But I not only wanted that speed between each node, I wanted to make sure others could take advantage of my upgraded system, too. So I sold all the other modems to local sysops and users." When word of the deal hit the streets, White sold out in five hours. The small profit he made on each modem more than paid for upgrading his system.

9600 Extremes

White's experience is actually right in sync with a growing trend: the sale of 9600-bps modems to users of desktop PCs. IDC, a market research firm, predicted such a trend early last year.

The IDC report states that from 1986 to 1988 there will be an 80 percent increase in the number of dial-up 9600-bps modems sold. The report also notes that, in 1986, 9600-bps modems commanded the largest share of the entire modem market (30.9 percent) in terms of total revenue. The main reason: most of these modems weigh in at a hefty four to six grand. However, the 80 percent forecasted increase didn't apply to these high priced modems, but to a new breed of 9600-bps modem costing much less.

These dial-up 9600-bps modems will likely end up tethered to desktop PCs — not the corporate mainframes of their high priced cousins. They are designed to operate over the normal two-wire voice grade telephone lines, as opposed to four-wire leased lines. But why, when most people are *still* running modems at 300/1200-bps, should these high-speed desktop modems suddenly command center stage?

> **Although the low end 9600-bps market is based on the same standard, it is anything but "standardized." Each manufacturer implements the standard in a different way, mainly by using proprietary error correction protocols. This creates havoc in the marketplace.**

Tradition

Traditionally, the majority of 9600-bps modems are used on four-wire, leased-line networks. These are typically private networks — set up by financial services or multinational corporations — that must have constant access to their network. In other words, the modem is *always* online. This allows immediate access to the network for information retrieval or for transferring data. Because of their complexity and "bullet proof" design, these "network" modems wear high price tags.

Today, several manufacturers are challenging the "traditional" image of these high priced speedsters. Hayes, USR, Racal-Vadic, and others, are selling dial-up 9600-bps modems, aimed at individual users, at one-sixth the price of the network 9600-bps breed.

Why the big price spread between the network modems and those being sold to end users? As it turns out, not all 9600-bps modems are created equal; the newer dial-up 9600-bps modems don't have to meet the same exacting standards as their expensive corporate counterparts.

Standard Differences

The difference in the 9600-bps market lies in two separate standards, V.29 and V.32, as recommended by the Consultative Committee for International Telegraph and Telephone (CCITT), an international standards setting committee.

The V.32 standard is generally considered the "true" standard because it specifies such modems must have a simultaneous transfer rate of 9600-bps in both the send and receive direction. (In technospeak the phrase goes something like: "synchronous, full-duplex, 9600-bps throughput.")

Without diving into heavy technical details, suffice to say that the V.32 standard is immensely complex to implement, primarily owing to a technology called "echo cancellation."

Because V.32 modems move data at high speeds, simultaneously and in both directions, they use 90 percent of the available telephone bandwidth. When this happens the send and receive signals cannot "pass" without bumping into each other. This "bumping" causes an echo effect. Echo cancellation technology enables these modems to decipher the correct signals or "filter out" the echoed (overlapped) data.

A helpful analogy is to think of the telephone line as a two-lane highway. Traffic flows in both directions simultaneously; but to carry increased traffic during rush hour, highway designers must either increase the number of lanes in each direction or widen the two lanes to accommodate erratic drivers and provide a margin of safety. Unfortunately these options aren't available to modem designers; there is a fixed amount of "lane space" inside a telephone wire.

Echo cancellation is the most sophisticated way of dealing with the limited telephone bandwidth. Unfortunately, it substantially increases the cost of the modem.

Another way to overcome this cramped bandwidth is to use the CCITT V.29 standard. This is the same technology that all modern facsimile machines use. It assures reliable 9600-bps operation, but only in one direction at a time. All "low end" 9600-bps modems use this standard.

In our highway analogy, the V.29 standard moves all the traffic in one direction for a certain amount of time, stops, then moves the traffic in the other direction. Because there are no overlapping signals, echo cancellation is not needed, which makes it possible to lower the price of the modem.

It should be added that all 9600-bps modems, regardless of the standard they use, are compatible with lower speed modems.

Can We Talk?

Although the low end 9600-bps market is based on the same standard, it is anything but "standardized." This is because each manufacturer implements the standard in a different way, mainly by using (hardware based) proprietary error correction protocols. This creates havoc in the marketplace; presently all V.29 9600-bps modems are incompatible.

Apparently the "real world" market is ignoring

Brock Meeks is a San Diego-based freelance writer and columnist for several magazines. This article was uploaded to his editor at the plodding rate of 1200 bits per second.

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such incompatibility. An excellent example is the application implemented by Security Pacific National Bank in San Diego, CA.

When Steve Harrison, MIS/DP manager for Security Pacific, needed a fast answer to a "data traffic jam" he turned to a V.29 9600-bps modem. The problem revolved around the need to speed up data transfer from the bank's mainframes to an off-site storage system. Previously, the system ran on 2400-bps modems. As the number and size of these uploads increased, Harrison found them running into the next pre-timed delivery. The file transfers were too big to be handled efficiently at 2400-bps.

"We simply outgrew that data rate," Harrison says. He needed a fast answer, and turned to the Racal-Vadic 9600-bps modems without hesitation. "As long as our corporate modems could talk with the off-site modems, I didn't much care whether anyone else could talk to them."

Such applications problems demand decisions that create a standard, rather than waiting for one to emerge. "It's a 'standard by edict,'" Harrison says.

But Can You Type?

There are two areas where high-speed dial-up modem performance is crucial: bulk file transfer, as in the Security Pacific case, and interactive or "dial up" applications.

Human factor engineering shows that people can tolerate only a small amount of delay between the time they enter a keystroke and the time their entry is echoed back to their screen. The upper level of this "tolerance" is 200 milliseconds or 1/5th of a second. Any delay over 200 milliseconds is detrimental to performance (not to mention patience). This "round trip" delay time is a major criterion for judging a high-speed modem.

Remember that these modems "flow" at 9600-bps in one direction at time. During one-way file transfers, such as downloading from a BBS, these modems can achieve an average transfer rate of 8,000-bps. (The less than optimal speed usually results from errors introduced by noisy telephone lines.) However, an interactive session requires a 9600-bps burst, in both directions, for every keystroke. (You type and the remote systems echoes, each at 9600-bps.) Such turnarounds are commonly referred to as "ping-ponging."

Other V.29 9600-bps modems dedicate the remote-to-user link to a speed of 9600-bps. But because these modems can't operate at 9600-bps in both directions, they regulate the user-to-remote link to only 300-bps. And although these modems don't have to deal with the delays incurred by ping-pong modems, there is significant extra delay imposed by noise on the 300-bps channel, reducing signal from the remote computer to less than 300-bps.

Just what kind of effect does this have on the tolerance" level of 200 milliseconds? Plenty, according to a study by Racal-Vadic.

The Racal-Vadic benchmark shows that on typical long-distance phone lines, the average interactive delay time (of the three 9600-bps modems tested, including their own) ranged from 204 milliseconds to 270 milliseconds. Clearly, these dial-up modems are not meant for intensive keyboard pounding.

Worth Their Weight In The Bottom Line?

Is there a 9600-bps in your future? The answer is a definite "maybe."

Few interactive sessions, beyond the full-screen editing done by remote programmers, are practical or necessary at 9600-bps. This given cancels out the borderline interactive effectiveness of the modem. Also, consider that very few online services are offering 9600-bps service. Where these modems really shine, however, is in the file transfer arena.

If you spend a lot of time downloading software from BBSs, it might be to your advantage to consider a 9600-bps modem. USR is successfully wooing sysops by offering them the HST 9600-bps modem for only $495. If that strategy works, BBSs all over the country will be upgrading to 9600-bps, giving you a great excuse (or at least a rationalization) for upgrading to 9600-bps.

And for networking? Imagine thousands of Fidonets (or similar systems) running at 9600-bps. Suddenly a network emerges that approaches the coverage, speed and efficiency of the world's fastest private networks; "global interconnectivity" — an economic fantasy at this point — becomes more than a mere pipe dream.

And corporations weighing the price vs. pay back advantage of buying now or waiting for a standard to emerge should heed the words of Ed Prentice, product manager for Racal-Vadic: "A company doesn't lose anything by installing V.29 9600-bps modems. When an eventual standard arises for dial-up 9600-bps modems, the price is likely to be attractive enough that you can shelve your present 9600-bps modems in favor of industry-wide compatibility.

"Your 'investment' in older 9600-bps modems will have more than paid for itself, while all along providing you the advantages of a high speed file transfer network. And that's just good business sense." ☐

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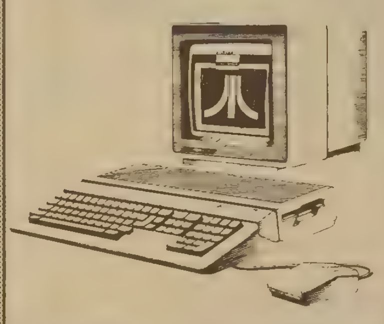

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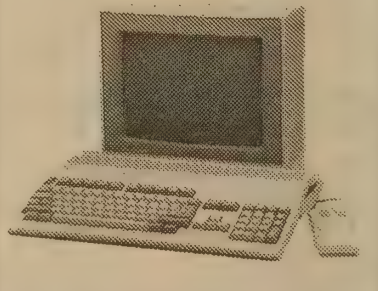

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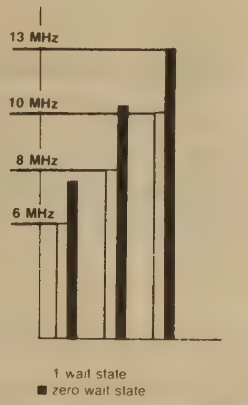

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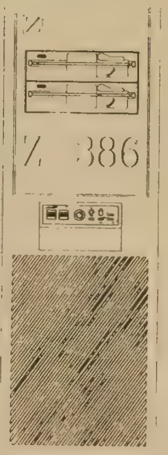

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The Tao Of AWK

By Bennett Falk

With a furrowed brow, Hapless User approached the UNIX gurus. "Do any of you know an editing command to switch two words around?"

The gurus knew by now that this was probably not what Hapless really wanted to know, and upon further questioning it came out that Hapless was trying to edit several very large files containing a mailing list in which the "phone number" and "date of birth" columns were swapped. Hapless was supposed to load the contents of these files into a database, but could not do so because the data types for birthdate and phone number were incompatible.

The gurus looked at the printout Hapless waved distractedly in front of them.

"Oh," they said, "you can fix this with an awk script."

"Awk script?" Hapless replied.

Most UNIX utilities are pretty specialized, like "grep." Grep is basically a one-job tool — it finds a pattern in a file and prints each line on which the pattern occurs.

"Awk script. See, your data files look like this:

```
Edna B.|Mudd| 1313 Alligator
Lane|Hoptoad|CA|94713|10/29/48|
415/634-5789|
```

There are eight fields in each line, and each field is separated from the next by a pipe sign ('|'). All you want to do is transpose columns seven and eight so the birthdate comes after the phone number in each line of your data, right?

"Right."

"Use this."

The guru scribbled something on a pad of paper. It looked like this:

```
awk 'BEGIN {FS="|"; OFS="|"{ \
{dummy = $7; $7 = $8; $8 = dummy; print
   $0}' filename
```

Hapless went back to his terminal, unquestioningly typed in the formula and pressed return. To his great surprise it worked. Excited by the efficacy of the little program, he went back to the gurus:

"Teach me about awk. What kind of thing is it?"

"Well," the gurus replied evasively, "that's a tough question.

"Awk isn't really like anything else in UNIX. It was created in 1977 by Aho, Weinberger, and Kernighan, and has had an uphill battle for recognition among UNIX utilities ever since. It was revised a couple of years ago, but since not many people knew what awk did in the first place, the new, improved version hasn't turned many heads.

"Most UNIX utilities are pretty specialized. Like 'grep,' for example. Grep is basically a one-job tool: it finds a pattern in a file and prints each line on which the pattern occurs. That's all it does: find things and prints them. Awk is just much more general."

"I don't understand."

"Have you read the manual?" the gurus replied, as evasiveness gave way to impatience.

"No."

"Go meditate on the manual, then ask your questions."

Hapless read the manual and *The AWK Programming Language* (Addison-Wesley, 1987), a book by the authors of the awk program. He learned that awk was a "pattern scanning and processing language." This brought him no closer to understanding what awk was, but he soon began to understand how to use it.

He learned that any awk command line could consist of three parts: the word "awk," a program or list of statements to be executed, and the name of a file or files on which the program would be run. Awk would read its input one line at a time and apply the program to each line.

Short programs, like the one the gurus gave him, could be included on the command line enclosed in single quotation marks. Longer programs could be stored in a file.

Hapless discovered that creating awk programs required a fair amount of programming skill. The program he'd been given by the gurus contained two instructions:

```
BEGIN {FS="|"; OFS="|"}
{dummy = $7; $7 = $8; $8 = dummy;
   print $0}
```

Each awk instruction consists of two parts, a pattern that awk looks for in its input and a list of things to do whenever that pattern was encountered.

Each instruction consisted of two parts: a pattern that awk would look for in its input and a list (always enclosed in curly brackets) of things to do whenever that pattern was encountered.

In the first line of the gurus' program, the word BEGIN was the pattern. This, Hapless read, was one of two special patterns (the other being END) to process instructions before and after reading any input. In the second line of the program, Hapless was surprised to see that there was no pattern: this meant that the instructions on this line were to be applied to every line of input.

The manual discussed the pattern portion of awk statements at great and sagacious length. Hapless realized that such patterns could be quite complicated, that they might include "regular expressions," such as grep might use, and built-in variables to identify things like line number, line length, or the number of fields in the line.

So far, so good. But what were these mysterious instructions? In the guru's programs, most of the instructions included in the command portion of the statements just assigned a value to a variable. The instructions in the first statement, FS="|"; OFS="|"}, just identified the pipe sign ("|") as both the input field separator (FS) and the output field separator (OFS). Both FS and OFS are built-in variables for awk, and their default value is " ", the space character.

The second statement performed three variable assignments to swap the position of the 7th and 8th fields in the input line, and then printed the entire line. "Dummy" is a user variable in

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the guru's program. Like all variables in awk, it is created just by being assigned, there's no need to declare what type of data (character or numeric, for example) it will store. The instruction "dummy = $7" copies the contents of the seventh field in the input line to the variable "dummy." "$7 = $8" copies the contents of the eighth field of the input into the seventh field of the input, and "$8 = dummy" copies dummy's contents into field eight. The instruction to print the entire line is "print $0."

This just barely scratched the surface of what could be put in the instruction portion of an awk statement. Obviously there were functions to manipulate text, but Hapless was surprised to learn that there were also arithmetic operations and functions. There were commands to control input and output between awk and files or between awk and other programs. Finally, there were "flow of control" statements (like "if... else" and "do...while") to manage the sequence of actions when things got complex.

As Hapless looked at the flow of control statements, the light began to dawn:

"This stuff looks a lot like 'C.'"

And, indeed, the syntax for all the flow of control commands was taken straight from the "C" language. When he found out that newer versions of awk would allow him to write and call his own functions, his intuition was confirmed: awk was essentially a "C" interpreter.

Now, Hapless had a long-standing grudge against all compiled languages, and against "C" in particular. He resented having to learn how to manipulate a compiler and linker in addition to mastering the rules of the language itself.

The syntax for all the flow of control commands is taken straight from the C language. Newer versions allow users to write and call their own functions, making awk essentially a C interpreter; the user can use it as a tool for writing short C-like programs without having to manipulate a compiler and a linker.

Awk has functions to manipulate text, but there are also arithmetic operations and functions, commands to control input and output between awk and files or between awk and other programs.

In awk he saw a tool with which he could write short, "C"-like programs to do what he needed. Hapless was ecstatic. He started to run back and tell the gurus of his discovery, but stopped short. He could imagine them clucking with disdain and asking sarcastically for proof. How could he possibly prove that awk was a kind of "C" that needed no compiler?

Disheartened, he went back home, and drowned his sorrows reading old *BYTE* magazines.

As it happened, one of the issues he leafed through was July 1987, which contained a reprint of the source code of for the "Sieve of Eratosthenes" benchmark in a staff-written article entitled "High-Tech Horsepower."

Hapless mused idly about the possibility of writing the sieve benchmark in awk. He went to his terminal and typed in the program as shown in Listing 1. He compiled and ran his version. Just over five seconds were required to run one hundred iterations of the loop that found all the prime numbers between 1 and 1024.

He then started adapting the C code for awk. To his surprise, it took only a few minutes. His awk version of the "sieve" program is in Listing 2. He ran it with the command "awk -f sieve.awk," and to his great amusement it worked: slowly, but perfectly well. When he timed the awk program, it took nearly twenty seconds to perform one pass through the loop. Clearly awk was not the tool for large applications.

Listing 1:

```
/* Eratosthenes Sieve Prime-Number Program
 * adapted from BYTE January 1983, reprinted
 * July 1987
*/
#define TRUE 1
#define FALSE 0
#define size 1024 /* was 8190 in original
# program */

char flags[size+1];

main( )
{
  int i, prime, k, count, iter;
  printf("100 iterations\ n");
  for (iter = 1; iter <= 100; iter+ +)
  {
  count = 0;
  for (i = 0; i <= size; i+ +)
    flags[i] = TRUE;

  for (i = 0; i <= size; i+ +)
    {
    if (flags[i])
      {
      prime = i + i + 3;
      /* printf("\ n%d", prime); */

      for (k = i + prime; k <= size;
        k+= prime)
        flags[k] = FALSE;
        count+ +;

      }
    }
  }
  printf("%d primes.\ n", count);
  }
```

Listing 2:

```
# sieve.awk:
# "#" introduces a comment
#
# /* adaptation of Eratosthenes Sieve Prime-
  Number Program from BYTE
# January 1983, reprinted July 1987
# */
BEGIN TRUE = 1
  FALSE = 0
  size = 1024 # was 8190 in original code
printf("100 iterations\ n");
for (iter = 1; iter <= 100; iter+ +)
{
count = 0;
for (i = 0; i <= size; i+ +)
  flags[i] = TRUE;
for (i = 0; i <= size; i+ +)
{
  if (flags[i])
    {
    prime = i +i + 3;
    printf("\ n%d", prime);
```

In spite of these performance limitations, Hapless took such pleasure in using awk to mimic small C programs that he did not even bother to seek out the gurus and tell them what he had learned.

A week later, he passed one of the gurus on the street.

"Hapless," the guru cried, "how is your awk meditation progressing?"

Hapless said not a word, but produced a printout of sieve.awk, his awk version of the sieve program. The guru looked it over wordlessly, from time to time peering over his glasses at Hapless. He grasped Hapless' elbow and steered him away from the crowd. Greeting him with the secret handshake that only gurus know, he whispered:

"Welcome to level 4." ☐

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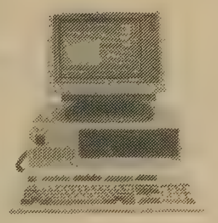

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Good News For ST Gamers

By Helmi Kobler

This December issue marks the one year anniversary of the Atari ST column in *MicroTimes*. It's been a wonderful 12 months, and I'm looking forward to the year ahead, especially since 1988 will be an interesting year for the ST. If Atari markets the new Megas well (i.e., if it lowers the machines' high retail prices), then there will be a siginificant burst in ST software and hardware from third party developers. We're already seeing some classy, professional software such as *CAD 3D 2.0*, *Publishing Partner*, *WordPerfect* and others. If the Megas are allowed to do well, there will be much more.

But enough of this Mega talk. The holidays are well on their way, and in the interest of the Christmas spirit, I'm going talk about a few of the hot games released lately. COMDEX, the national computer industry trade show, is only a week away as I write this and I'm betting that I'll return from it with enough new product information to fill next month's column without even a peep about Christmas games and such. So to avoid the reputation of being a Scrooge, it'll be hot new games this month and reports on Atari's CD-ROM player, 32-bit workstation box, and more next month.

MIDI-MAZE

One of the most unique games for the ST comes from Hybrid Arts, a small software firm known widely in the electronic music world for MIDI software such as sequencers and patch librarians. *MIDI-MAZE* ($39.95, 213/826-3777) has nothing much to do with music, but it uses the ST's built-in MIDI ports to become perhaps one of the world's greatest computer party games.

I call *MIDI-MAZE* a party game because it's the kind of game that's best played with a lot of people. The more the merrier! The premise of the game is a little silly, but works nonetheless. You control a sphere-shaped Happy Face that has been placed in a maze with up to 15 other Happy Faces. Picture a man-sized, three dimensional version of those Happy Face buttons popularized in the 1970s and you've got the idea. You maneuver your Happy Face through the maze (using either a joystick or mouse) with a first person perspective, as if you're actually standing in the maze yourself, viewing it from where your Happy Face stands.

The object of the game is simple: to roam through the maze and, by way of two or three fired shots, kill any other Happy Faces you encounter. Whichever Happy Face is first to score 10 kills wins the game.

MIDI-MAZE's claim to fame lies in its ability to chain multiple STs together via their built-in MIDI ports, creating a network where players, each playing at their respective ST system, can actually fight one another in real time in the same maze.

Intense play is inevitable if you have several players (16 are allowed on one network). Players become super-cautious, even paranoid, nervously checking behind themselves for any unfriendly Happy Faces that might try shooting them in the back. Players develop strategies and styles, such as hiding behind corners of the maze until other Happy Faces pass by, following them into a long, narrow corridor where escape is unlikely and then letting them have it! In the early stages of the game, it's an anarchic every-man-for-himself contest to score the most kills. In mid-game, a few dominant players emerge and force the others to form teams and alliances — "You don't shoot me and I don't shoot you — but we both shoot the Red guy!" sort of thing. As the players near their 10-kill goal, though, alliances usually fall apart and the backstabbing and betrayals begin. *MIDI-MAZE* is a great experiment in human psychology.

Of course, not many people own multiple ST systems to create a *MIDI-MAZE* network. The game can also be played solitaire, where mazes are filled with up to 15 other hostile, computer controlled Happy Faces which vary in intelligence from Plain Dumb to Not-So-Dumb. If you become bored with the library of pre-designed mazes included with *MIDI-MAZE*, you can create your own with an ASCII text editor.

Although certainly not as fun as the multi-player *MIDI-MAZE*, stalking (and being stalked by) the computer is still exciting. But if you get some friends to bring their systems over during the holidays, give a multi-player *MIDI-MAZE tournament a try*.

Gauntlet

Another game arriving in time for the holidays is Mindscape's *Gauntlet* ($49.95, 800/221-9884), an ST translation of Atari Games's 1985 arcade hit of the same name. Be either Thyra the Valkerie, Merlin, the Wizard, Questor the Elf or the mighty warrior, Thor, and explore vast dungeons for magic potions, treasure, food and adventure. Of course, (and this is an original idea) the journey will be perilous, as hordes of ghosts, evil wizards, fire-spitting demons, trolls and other undesirables challenge your every step.

It's not hard to guess that *Gauntlet* is a strain of the traditional arcade shoot 'em-up. It has no profound puzzles to solve, but it has flashy graphics (though its scrolling sometimes lacks smoothness) and its relentless hack 'em character can be entertaining, if that's what you like. Also, if you're a fan of the arcade *Gauntlet*, you will appreciate that the ST version has remained more or less faithful to the original, with only minor exceptions. For instance, only two people, as opposed to the original's four, can play simultaneously due to the ST's two joystick ports.

Young kids, especially males, will like *Gauntlet* and probably play it religiously for days into the New Year. I personally found it easily mastered and redundant after a short time, though.

If you're looking for more arcade translations, Mindscape has also ported over an ST version of Xevious, another popular Atari shoot-'em-up.

The Bard's Tale

If the simplicity of *Gauntlet* doesn't appeal to you, take a look at *The Bard's Tale* ($49.95, 415-571-7171), one of Electronic Arts's newest games for the ST. Since *Bard's Tale* had been out since 1985 for 8-bit machines such as the Apple II, I was afraid the ST version might have been a direct port, retaining the look and feel of the versions running on inferior machines. *The Bard's Tale* was a pleasant surprise. Although it uses the ST's low resolution, colors are used effectively. The game's scrolling is quick and you can use the ST's mouse as an alternative to the keyboard. My only regret is that *The Bard's Tale* is copy protected, barring its installation on hard drives. This is a pain, since swapping disks is tedious and waiting for floppies to load and save information tends to interrupt the pace of the game.

The story of *Bard's Tale* is perfect for the adventurous soul. The once "harmonious" town of Skara Brae has been overwhelmed by the dark forces of some deranged Wizard. And it's up to you and a ragtag party of various characters to resist. You've got warriors, wizards, bards, paladins, and monks to help you succeed. And just about everyone (and -thing!) else to see that you don't.

The game sports over 80 different spells to use, and 16 mazes to explore, not to mention the various shops, temples and castles of Skara Brae. Game play resembles role playing games such as Dungeons and Dragons, where characters are created by choosing race, class, and attributes such as strength, intelligence, luck, etc. and advance to in level by acquiring experience points.

The only thing going against Bard's Tale is that it's a very involved game, requiring you to invest a lot more time in it than you would a game like *Gauntlet*. But if you've got any free time during the holidays, give *The Bard's Tale* a try.

F-15 Strike Eagle

Finally, Microprose has released an ST version of its *F-15 Strike Eagle* jet simulator ($34.95, 301-771-1151). *F-15* was a popular game for Atari 8-bit computers years ago, though in retrospect it suffered from kludgy speed and blunt, wire frame graphics. The ST port has sped things up a bit, while adding 16 colors to cockpit displays and solid-form graphics to ground targets and enemy planes.

The object of the game in *F-15 Strike Eagle* is tactical jet fighter combat. You're given a choice of several missions to take on, ranging from the bombing of Libya or Hanoi to dogfighting in the Persian Gulf. Since *F-15* is supposed to be a simulation of the real thing, Microprose has put a lot of attention to detail into the game. Your jet comes with a limited arsenal of ammunition, bombs, and short, medium and long range missiles. You can employ electronic jamming or launch flares when taking evasive action from enemy air or ground missiles. The game's manual also discusses various offensive and defensive flight maneuvers, and includes detailed descriptions of the different enemy fighters encountered in during missions.

For the armchair Tom Cruise or young, aspiring Top Gun jet ace, *F-15 Strike Eagle* is a must. ☐

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

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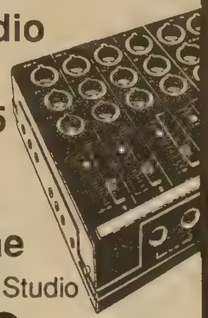

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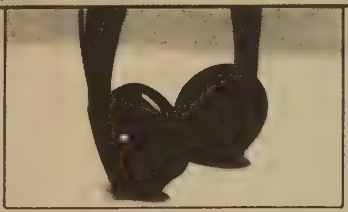

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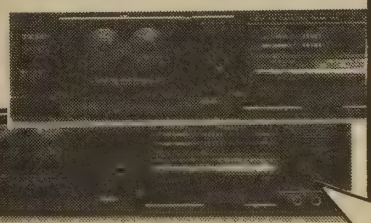

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AMIGA

Report From The Shows

By Matthew Leeds

Last month was a very full one for Amiga owners. Two computer shows provided a showcase for new products, as well as a venue for seminars and after-hours discussions. The Commodore Show in California and the AmiEXPO in New York ran on back-to-back weekends, adding new miles to my frequent flier program.

There was other excitement as well. The California show was at the Disneyland Hotel, two days after the 6.1 earthquake. While I was there a 5.5 aftershock at 4 A.M. caused the occupants of over 200 rooms to check out of the hotel before 6 A.M. Lightweights.

I had the opportunity to see a large number of new products, some I had never heard of before, and others I had only read press releases on. I also spent time talking with several developers, and learned a great deal of new and interesting information.

Programming, Graphics, Video Music, And Games

Perhaps the most interesting new product was **AiRT**, a programming language based on icons, from PDJ Software. It is designed for the creation of small programs which non-programmers can develop quickly to fill specific needs. Instead of writing code using a text editor, you select icons that perform functions. By stringing sets of function icons together in "frames," you can create structured programming constructs. *AiRT* comes with an editor, compiler and reference manual; additional utilities are also included.

Another innovative product that caught my eye was **Mouse Trace**, from Crystal Innovations. This is a pantograph-like device consisting of a framework that holds your mouse, a large pad with a translucent cover that holds original artwork you wish to copy, and a pointer that does not obscure your artwork. You control the framework by holding the portion that contains the mouse, and trace the pointer over the artwork.

The Other Guys were showing two new tools for the Amiga. **Reason** is a set of writers' aids for proofreading text, analyzing style and providing help and editorial comment on English usage. *Reason* checks readability and sentence characteristics, prose style and the use of passive verbs or expletives, general diction, the use of sexist terms, acronyms, spelling errors, double words, punctuation errors, diction and split infinitives. It appears to be a very ambitious product, and I'm looking forward to testing it in the future.

The Other Guys were also showing **Synthia**, a digital synthesizer for the creation of IFF instruments. The specifications looked impressive; this is one of a number of music products that will bring the Amiga a lot of attention in the mid-range professional music business.

Digital Creations caught my attention with **D'Buddy**, a collection of graphics utilities organized around a IFF paint program, designed for use with any resolution mode, including HAM. This is one of a growing number of programs that will take market share away from *Deluxe Paint II* as users find specific features that meet their particular needs. Also shown was **Super Gen**, a professional level genlock and dissolve unit. *Super Gen* offered dual dissolve sliders, programmable dissolves, loop through input and output including key out, adjustable vertical and field start, and output is claimed to meet RS170A spec. Professionals, take note.

LIVE!, the original real-time video framegrabber, is now shipping. It is available from A-Squared Distributions. Several improvements have been incorporated into the software, including an interface with *Deluxe Paint II* that lets you load a captured video into *DP II* in real time. There is also a sequence capture mode that lets you capture consecutive frames, to the limits of available RAM. A complete library of programming documentation and support will also be available for third party developers. The wait is over.

One result of the long wait has been the entry of other companies into the video capture business. Mimetics has been showing its frame buffer with image capture option for several months, and now Designlab has adapted its frame buffer hardware to the Amiga. The **FB-1** was originally developed as a professional product, and it's priced out of the reach of the casual user, but it offers some very professional capabilities. It can store up to 16 frames of video and play them back in any order. However, the current version of the *FB-1* is limited to black & white at 256 × 242 resolution. The developers claim to be adding color, higher resolution, additional storage, and image processing software.

Another well known Amiga developer also was showing a video capture product. The **Perfect Vision** from SunRize Industries was shown in beta form, and appeared to be inspired by *Digi-View*, but with several enhancements: real-time image capture and the ability to accept any video source. The quality of the image captured seemed low, but the supporting software was not finished. This will be the key issue in deciding if *Perfect Vision* will be an acceptable alternative in choosing a video capture product. SunRize also showed *Studio Magic*, an IFF sound sample editor and MIDI sequencer.

Microillusions showed a variety of new products including **Fire Power**, a very popular game that wins this month's gratuitous violence award for its sound and visual effect of a human being being run over by a tank. In a more humane category was **Music-X**, an entry in the professional music area. It offers full MIDI support, keyboard mapping, real-time recording and sequencing, editing, and the ability to store very large samples. Additional support is provided by the **Micro MIDI** hardware interface and the **Micro SMPTE** reader. In development is the **Patch Editor Construction Kit**, a graphical patch editor that can be customized for virtually any synthesizer.

PAR Software was showing **Express Paint**, an interesting mix of standard paint features and text layout. It provides the ability to format text inside any shape or around any shape. It also supports the half-brite mode, super bit maps, and overscan. It is another example of innovation in the Amiga software market.

New video software products were also in abundance. InnoVision Systems showed a new approach to the 3D animation field. **Video Effects 3D** uses a low-res interlaced overscan display and dual playfield mode (eight color) to animate IFF pictures and brushes. Some of the special effects were amazing, and you can animate up to 99 objects at a time. A beta version of the software was being shown and it looked promising.

Aegis Development showed **Video Titler**, a title generation and presentation graphics package. This is a solid looking title effects package that supports all resolution modes in overscan (except HAM), and uses Amiga system fonts and Aegis's own Polytext Fonts. It also supports the half-brite mode.

A new company in the Amiga market, Syndesis, has two well known Amiga personalities as key players: John Foust and Harriet Toll. Their first product, **Interchange**, is a 3D conversion program. It consists of three modules: the master program and two conversion modules for **Sculpt 3D** and **VideoScape 3D**. It will convert object files from one format to another preserving texture and color information as well. Additional modules will be available in the future to support other 3D formats.

Hardware

A tremendous amount of new hardware for Amigas was also shown. Memory expansion systems, hard disks, expansion chassis, co-processor boards, the whole range—and once again the Amiga owner gets to deal with the non-standard choices offered by a variety of manufacturers. Make your decisions carefully.

Byte by Byte showed a **memory expansion system** for the A500. This is a single board 0–2MByte box with its own power supply. It uses a zero wait state design and can be purchased populated or unpopulated. The power supply turns off when you power down your A500. The case is extremely small, and the board comes with memory verify software.

Spirit Technology showed its A500 memory expander, the **Inboard**, an internal memory expansion board with battery-backed clock calendar. It can be populated with up to 1.5MBytes of memory, and connects through the 68000 socket. It can be used in conjunction with the A501 memory expansion to provide a total of 2.5MBytes of memory in your A500.

Pacific Peripherals demonstrated the **SubSystem**, a two slot expansion chassis for the A500 that accepts the new Zorro form factor expansion cards (A2000 style). It contains its own power supply and has room for one additional 3½" floppy drive. The entire system sits under the A500 and only adds 1.5 inches to the keyboard's height. It looked very clean to me. Also shown in the booth was the **Infinity**, a 10MByte removable floppy disk system that interfaces to any

---

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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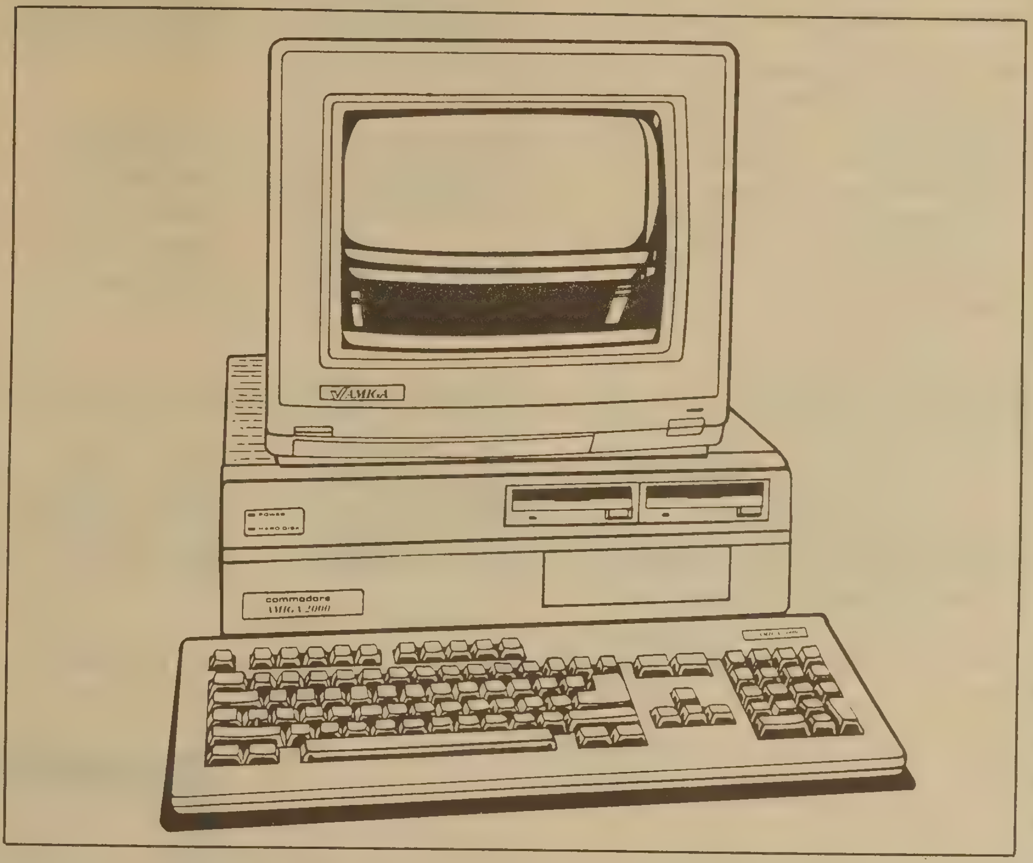

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ASDG previewed the **Satellite Disk Processor,** which may be destined to become the premiere hard disk controller for the Amiga. This is far and away the most ambitious controller I've seen to date for the Amiga. It has an on-card 68000 and 512KBytes of cache RAM, on-card DMA support and MMU, and will support two ST-506 devices and up to 56 SCSI devices. It has room for an optional 68881 chip and supports booting directly from the hard disk. It won't be cheap, but the high end never is.

News

Other news of note. That venerable warhorse of Commodore magazines, **Transactor,** is going to start a bi-monthly magazine covering the Amiga. The plan is to publish alternate coverage of Commodore 8-bit machines and the Amiga. *Transactor* has a solid reputation for in-depth technical articles; if you like that sort of thing, check out the first issue, due out in January of '88.

Finally, Commodore now has a new president and chief operating officer, **Max Toy.** No he's not a TV series. Mr. Toy has previously worked for ITT, Compaq, and IBM. The hope is that he will be able to expand Commodore's distribution and VAR programs, and bring an additional degree of corporate-level acceptance to the Amiga. I wish him good luck and great success.

I'm off to COMDEX in Las Vegas. I'll be bringing back information on new products from New-Tek, a look at Animate 3D from Byte by Byte, and news of new developments in the Amiga arena. I'll put five on the black and see what happens.☐

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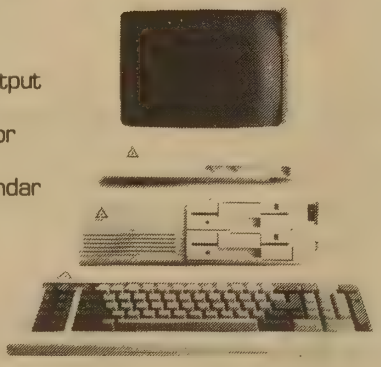

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continued from page 58

three-inch line, you have to hold a ruler up to the screen, and judge it by eyeball. *TopDraw* can place a metric or English unit grid on the background, and a show dimensions command can be toggled on or off for any selected object. You could easily draw a *diagonal* line exactly three inches (or centimeters) in length.

TopDraw treats overlapping objects in a very intuitive way. An "arrange" menu lets you select any object and bring it to the front, send it to the back or shuffle it up or down in the stack. The "invisible" parts of an object still exist, even when they are concealed by other objects.

Bit-mapped graphics programs typically offer one level of magnification ("fat bits"), and one level of enlargement (zoom out to a full-page view from the half-page drawing window). *TopDraw*, in contrast, has a powerful view menu that allows you to reduce or enlarge the scale incrementally.

Although *TopDraw* can run on the minimum 512K (standard for most ProDOS 16 applications) it can take advantage of additional memory to create very large drawings. You can change the actual scale and size of your drawing, up to a monster 8 by 8 standard pages. Big documents can be printed out one page at a time, and then pasted together by hand.

TopDraw can save files in two different formats, its own object-oriented format, or the standard Apple PICT format. Bit-mapped graphics in PICT format can be imported from other programs (such as *PaintWorks Plus* and *DeluxePaint II*). *TopDraw* treats these imported graphics as patterned rectangles, which can be reshaped, but not edited.

TopDraw was one of the first programs to be released with version 1.2 of ProDOS 16, Apple's new operating system for the IIGS. The major visible changes are some new fonts (including the Greek alphabet and Cairo, a collection of cute little hieroglyphics) and a LaserWriter printer driver. It is hard to imagine most home users buying a printer that costs five times as much as the computer, but cheaper printers that emulate the LaserWriter are on the way. For some users a IIGS with *TopDraw* could be the perfect tool. Interior designers and landscape are just two examples of people who need to work with precise dimensions and a wide range of colors and patterns, but don't need the complexity of a full-featured CAD package. Apple would prefer that draftsmen and engineers buy Macintosh, so we will probably never see a CAD program for the IIGS; we may never even see drivers for standard pen plotters. As an output device, your choices are the ImageWriter II, or nothing.

TopDraw is copy-protected, but it can be installed on a ProDOS-formatted hard disk. There is a technical support hot line, but it is not toll-free. The 187-page spiral-bound manual is superbly organized and illustrated. There is a good index, and a very useful quick-reference card. (StyleWare, 5250 Gulfton, Suite 2E, Houston, TX 77081. (713) 668-0743.)

Clip Art Gallery

Created by: *Hilary Mills and Muffy McCosh*
Published by: *Activision (1987)*
For: *Apple IIGS (requires PaintWorks Plus)*
List Price: *$30.*
Reviewed by: *Mike Markowitz*

Until the IIGS came along, graphics for the Apple II were pretty crude. With only a limited selection of colors and moderate screen resolution, the Apple artist had to make every pixel count. Now the picture has changed. *Clip Art Gallery* is a dazzling example of the visual feast that the IIGS offers. Compared with clip art packages designed for the IIe and IIc, the images for the IIGS are more richly detailed, more lifelike, more like what you would expect to see on an Amiga, in fact.

This 3.5" disk contains over 600 images, organized by theme into 26 files. The topics include: Academic, Food, Alphabet, Gadgets, Americana, Holidays, Animals, Outer Space, Arts, Party, Awards, People, Borders, Phrases, Birds, Plants, Bugs, School, Buildings, Sports, Business, Symbols, Fantasy and Vehicles.

Clip Art Gallery is designed to work with *Paintworks Plus*, or any other IIGS paint programs that recognize the *Paintworks* picture file formats. At this writing, it is not clear which of several forthcoming programs will fit into this category, but *Deluxe Paint II* definitely does not.

Each file is actually a "page" that contains more than you can see at any one time on the *Paintworks* drawing window. You have to scroll around to select the particular image you want, then "lasso" it or cut it out, and copy it to the clipboard. You can then paste it into your own artwork. Each page of clip art is created with its own palette, so copying it into a picture that uses a different palette can sometimes give bizarre and unexpected results.

The disk is accompanied by a 30 page booklet that provides instructions and hints, along with a sampling of illustrations from each file (a complete "catalog" would have been much more helpful). Nevertheless, *Clip Art Gallery* is a good value for owners of *Paintworks*, at least until public domain collections of IIGS clip art start to appear. (Activision, P.O. Box 7287, Mountain View, CA 94039.)

EDUCATIONAL SOFTWARE

Talking Teacher

By: *Firebird Licensees Inc.*
For: *Commodore 64/128*
List Price: *$29.95*
Reviewed by: *Sue Albert*

If you have heard other computer progams speak and your reaction was "eh?" you are in for a surprise with the *Talking Teacher*. Here is a program that not only speaks clearly and distinctly, but uses speech in a joyful way to teach even very young children their way around the keyboard and the alphabet.

There are three levels to *Talking Teacher*, but they all start out in the same brightly colored schoolroom with a blackboard on the wall. The voice (I call him Mr. Smooth), a disembodied hand, a hundred small animated word subjects, and of course, the alphabet, inhabit this pleasant space at different times.

In the first level, when a letter key is pushed a giant letter appears, Mr. Smooth pronounces the letter, and the hand writes both upper and lower case on the blackboard. Things really liven up in level two where Mr. Smooth asks the player to find the first letter of a word on the keyboard and gives hints to the key's location ... "Try a little lower," "You're getting warmer." When correctly chosen the letter gets to speed, with its own unique "alphagait," out the door into a landscape to find not only the rest of it's word, but a fitting animation. The key is requested again, and when correctly pressed there is a reward of an ever-building melody. If interest wanders, Mr. Smooth invites the player to return to the keyboard. On level three, Mr. Smooth asks for the beginning letter of a word, then presents the animation. Incorrect answers are reviewed and the hand prints the letters, while correct responses receive the music reward.

Talking Teacher is a thoughtful and subtle educational program teaching letter recognition, spatial relationships, and letter/word pronunciation. Each level must be loaded separately so a child can use the whole keyboard without disrupting the program, which will continuously start over. It is recommended for children 2–8 and could be used effectively with the sight- or learning-impaired.

In the manual there is a brief program description, a few helpful suggestions and a complete word list on the first five pages, with the rest devoted to an alphabet coloring book. A small set of crayons is included. One word of warning. *Talking Teacher* is another program that will not load with a Cardco +G interface plugged into the cassette interface port.

OTHER REVIEWS

Celebrity Cookbook

By: *Diane Ward*
Published by: *Merrill Ward*
For: *Commodore 64/128, IBM-PC, Apple II (64k)*
List Price: *$19.94*
Reviewed by: *Sue Albert*

When I got my Commodore 64 four years ago, I was frequently asked "What are you going to do with it, record your recipes?" That assumption about the limitations of the computer and females proved ironic. All the recipe programs that appeared for the C64 have been dull, inflexible, and replete with dreary recipes.

Celebrity Cookbook, a recipe program worth it's salt, fills this vacuum. Like a cross between *Bon Appetit* and *Woman's Day* magazines it is bright, cheerful, and chock full of extra features and friendly surprises. The first surprise is Diane Ward, that rarity, a female programmer, who gives *Celebrity Cookbook* its woman's touch. From the fashionable cover art, to the color co-ordinated disks inside, it successfully reflects Diane's philosophy that computer programs should be uncomplicated enough to require only a key stroke to operate, have minimal documentation, and be good fun.

The program resides on two sides of one disk, the second disk being prettily labeled and formatted for storing your personal recipes. The opening screen presents a quote by Andy Rooney, a Scott Joplin rag and then a choice of recipes by the rich and famous, a Wine Directory, Bar Guide, and recipes by the author. Side two offers, (What else?) Diets of the Stars, Perle Mesta's Party Tips, a quiz rating your standing as a guest, and a slide show of food oriented graphics plus the heart of the program, the Recipe Filer.

The versatile Recipe Filer prints out its own short manual. Unlike most recipe programs it has a small flexible word processor instead of pre-set database formats. While appealing to my lazy side, the latter always turn out to be restrictive when recording even a standard list of ingredients and instructions. With the word processor, you are free to arrange each recipe to fit your own notions of proper sequence and layout. The Recipe Filer allows you to rescale recipe ingredients and has a "find" feature for locating ingredients or amounts within a recipe.

The recipes included in *Celebrity Cookbook* run the gamut from "Grandma's Vinegar Cake" by Jerry Lewis to upscale gourmet fare.

An educated palate is reflected in the Wine Directory with its suggestions for that "perfect" wine to mesh with a large variety of foods. The bar guide not only has authentic recipes for twelve classic drinks but a portion guide which indicates how much liquor to have on hand for your expected guests.

Celebrity Cookbook is the first in a proposed series of low cost, cooking programs from Merrill Ward. Each is to contain fifty new recipes and a wide variety of related features like: shopping efficiency, etiquette, nutrition, and the psychology of eating habits. Volume Two, containing a Substitution and Conversion program, is due to be released in a few weeks at $14.95. (Merrill Ward, 255 N. El Cielo Road, Suite 222, Palm Springs, CA 92262.)

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LINKS

Computers And Communities

Electronic Democracy In The Old West

By Mary Eisenhart

Dave Hughes didn't come to the Hackers Conference this year. He was in the wilds of Montana, setting up a system to connect all the state's one-room schools via packet radio. He's also planning to set up an electronic village in an undisclosed ghost town in Colorado's mountains, where he imagines the residents will elect sysops rather than city officials. And in recent months, he's fired more than a few salvos at the FCC in the matter of proposed access charges for packet-switched networks.

Like generations of his family before him, Hughes lives in Colorado Springs, CO, a town where the spirit of the Old West thrives and every Air Force Academy cadet is issued a PC upon enrollment. Futurist, populist, poet, pioneer (as Sourcevoid Dave) of electronic publishing, West Point graduate and retired Army colonel, Hughes labors energetically at dragging his hometown and the world at large, often kicking and screaming, into the Information Age. A familiar figure about town with his ubiquitous cowboy hat and Toshiba laptop, Hughes has acquired something of a local reputation as a gadfly: "My grandfather carried Colt 44s," he says, "and I carry a hip-shooting microcomputer. And I shoot it just as effectively as he did."

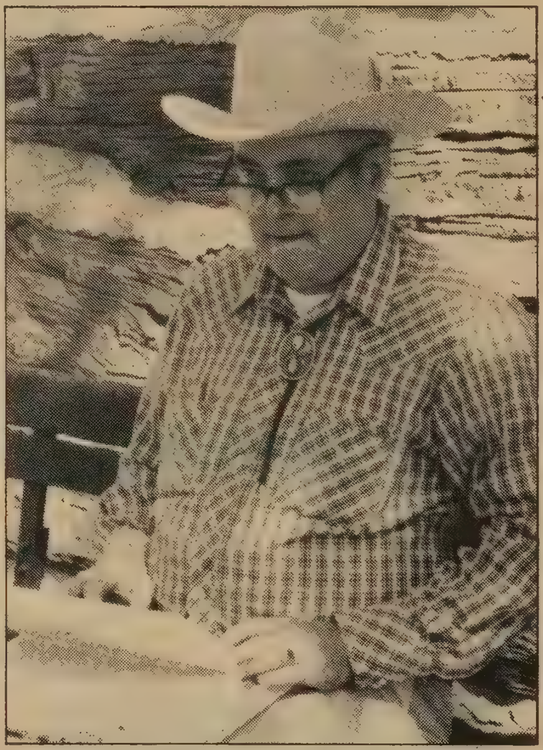

Photo: Mary Eisenhart

Says Colorado's Dave Hughes: "My grandfather carried Colt 44s, and I carry a hip-shooting microcomputer. And I shoot it just as effectively as he did."

Hughes, along with his partner Louis Jaffe, runs Chariot Communications. Among Chariot's features is a free public bulletin board with a special section called Roger's Bar (after the historic local smoke-filled room) devoted to discussing local, national and global political issues. In Roger's Bar, a spectrum of locals from teenagers to truck drivers to professors to Air Force generals debate the issues in a forum where speakers prevail by the merits of their arguments and the quality of their ideas. Somewhat to the consternation of local politicians, in its five years of operation, Chariot—and, by extension, electronic communication in general—has proved, in Hughes words, "a tool that's got to be reckoned with, a legitimate public policy tool for the general public."

In the continuing onslaught of more powerful machines and spiffier software, providing us with ever-better tools and toys, it's easy to lose sight of another profoundly influential aspect of the personal computer revolution—its impact on the larger community of which computer users usually comprise only a small fraction.

Links is a column dedicated to exploring the role of the personal computer in the community, whether local or global—bulletin boards operated by local governments, computers in the operations of service organizations, the use of computers in grass-roots political and social campaigns, and a host of ingenious applications we haven't heard about yet.

We welcome your feedback and suggestions for future subjects of this column. Please send them to Links, MicroTimes, 5951 Canning Street, Oakland, CA 94609, or send email to microx on The WELL at (415)332-6106.

Hughes' first foray into electronic politicking came about three years ago. Like many cities, Colorado Springs faces a perennial conflict between economic health and quality of life; in a period of hard times, the planning commission found itself dealing with a sudden proliferation of backyard auto repair businesses and other unsightly attempts by local residents to make ends meet. In an effort to solve this problem, the commission proposed an ordinance change that would put stringent restrictions on at-home businesses. Hughes saw a legal notice for public hearings, was the only citizen who showed up at the commission meeting to discuss the bill, and found the legislation full of flaws—including what he considered terminal unclearness on the concept in the matter of technology and the city's future.

"I argued high tech," he recalls. "I cited the fact that Toffler, in *Third Wave*, interviewed Hewlett-Packard in Colorado Springs, and asked the manager then, what percentage of his workforce—and this is 2,000 people—could work at home, and he said 35%. *In 1979. In Colorado Springs.*

"The restrictionism of zoning—you're in a residence, or you're at work, or in the marketplace, recreation—also stems from the industrial age theory of the division of work—people lived at home, they shopped in malls, and they worked in companies or factories, and zoning reflected it. So that mindset, which is still what planners are taught, simply reflected that, and not the post-industrial society, where where work is, and where play is, is starting to blur.

"So I said, you've made an ordinance that I couldn't remodel my bedroom as a telecommunications center, under the spurious theory that that's going to interfere with my neighbors. But homes are going to be places of work in the future, if they aren't already; you are actually repressing the economy of Colorado Springs in the effort to somehow improve it. Quality of life starts with a buck, making an income, and people cannot afford to enjoy the quality of life in Colorado Springs. That has been its chronic problem.

"That kind of stunned the planning commission," he laughs. "They hate to see me coming anyway."

The commission voted to table the matter for 30 days. Hughes went home and uploaded the text of the proposed ordinance to Chariot. He then wrote a letter to the editor of a local paper, explaining what he considered the evils of the bill and inviting local residents with modems to call in and discuss it.

"The city council never knew what hit them," says Hughes of the subsequent groundswell of public opinion. "Two hundred fifty people at least, who didn't know me, the ordinance or the bulletin board, dialed in.

"What I had not anticipated was that among them were professionals in larger companies,

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who read the paper in the morning, went to work, sat down at their company machines, dialed in, hit the printer button, printed out the ordinance and the comments on it, put it on the Xerox and passed it around the plant.

"Thousands of copies of the ordinance got circulated in town. One poor planning commission member went to the Osborne Users Group on a Saturday morning, was confronted with stacks of printouts of the damn thing, and spent the whole time defending himself against fellow Osborne User Group people.

"And then when we walked in the door for the next meeting 30 days later, it was populist. From Libertarians to longhairs in there, not all in computers by a long shot, music teachers and everything else. Because it was populist, there was no organization out there, it was inherently decentralized."

The ordinance went through several revisions, each of which was posted and debated on Chariot, and finally reached what was considered a workable version. Whereupon it passed with no further public comment. The mayor made some carping remarks about the fickleness of public interest; Hughes retorted: "The process worked, it did not fail. The real hearing was in the RAM of a neighborhood computer. Where the hell were you?"

"Next day," he grins, "City Hall was online—and that started the process where the city realizes that it can do the same thing."

Since then, Chariot and Roger's Bar—and other local boards—have become a force to be reckoned with, utilized by proponents of various causes.

On Chariot, teenagers, truck drivers, professors and Air Force generals debate the issues in a forum where speakers prevail by the merits of their arguments and the quality of their ideas.

Hughes derives particular glee from Chariot's role in the election victory of an utterly unknown candidate for city council this spring. It seems that the favorite candidate for the vacant seat was a local professor, a friend of developers and advocate of urban growth. As it happens, this professor had roused the ire of Hughes some years earlier with the remark, "What could anybody possibly have to say on a computer network or bulletin board that's significant?"

Recalls Hughes: "I said, as a professor of political science, if you don't know that in the year 1985, if you don't grasp that at all, I don't know why you are fit to educate my children. You're not preparing them for the public policy implications and the political implications of these new forms of communications. After all, it's a cliche what television's done to politics.

"So I just decided that if he ever gets into an influential position, I'm going to oppose him."

Three weeks before the election, Hughes went to a Candidates' Night, and was favorably impressed with local merchant Wayne Fisher. He invited Fisher to upload his platform to Chariot and watch the response. Fisher was able to discuss his views with the board's callers; further, the online feedback helped him tailor his presentations to his offline audiences.

When the votes were counted, Fisher (who'd spent a princely $1,400 on his entire campaign, and that with great reluctance) had triumphed over his famous and free-spending rival by a narrow margin of 180 votes. This political miracle of the electronic age attracted the attention not only of local papers but publications as far-flung as the *Wall Street Journal*.

All of which makes Hughes quite happy, since Fisher is currently engaged in battle with local bureaucracy to make online communications an integral part of local government: "He was so impressed with the results that he then got agreement from the city attorney that he could go online and discuss with the public even quasi-judicial matters. The only issue that has not been resolved yet is, if two councilpersons come online, does that constitute a meeting under the legal interpretation of council meetings; therefore, does it require notification?" But he thinks the day is not far off when Colorado Springs citizens can access their city government via modem, and "when they've done that, I'm content."

"This is a serious tool of public debate, and public policy, and partisan politics," he says. "All I would hope is that more people do it. Go find somebody that's got a bulletin board and get your ideas in there." (Chariot can be accessed at 303/632-3391, 300/1200 baud, 24 hours. Voice number is 303/632-4848.)

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Finally, The Do-It-Yourself 386 Article

By Ken Milburn

Little by little, the wall between us and the computer is crumbling. Cryptic commands are being replaced by the universally understood symbols and drop-down menus of the Macintosh/GEM/*Windows* environments. It's getting easier to put words and pictures together on the same page. And the computer can be as good as you are at looking up information, taking notes and answering the telephone all at the same time. But if we're headed toward "natural" computing, we're going to need machinery that's more intelligent, versatile and agile.

Twelve issues (a whole year) ago, I wrote an article on the Intel 80386 processor chip and the promise it held for us as the engine for a microcomputer powerful enough to do all of the above. At the time, the story had to be based purely on research and the announcements made at the November '86 mega-micro-show, COMDEX. The idea was to follow up with another story recommending a general-purpose power-user's machine based on the everyday experience of using a 386-based AT clone. Who knew it would take a year to pull the most significant bits and pieces together and test them out?

Any significant new computing engine requires lots of new support circuitry and has the potential for running new types of software. The 386 is no exception. The objective was to find the answers to four questions:

(1) What components make a practical, versatile and cost-effective system? What does it take to put them together; what are the pitfalls; and how much should it all cost?

(2) What benefits does the 386 bring to *personal* computing? We can take for granted the benefits of its use as a multi-user system, network file server or mainframe gateway. But what does this muscle bring to a micro used as a general-purpose, single-user business/graphics tool?

(3) How can you protect your investment by configuring a "generic" 386-based AT-compatible to be as congenial as possible with new "standards" being set by IBM's second-generation PS/2 Series personal computers?

(4) In what ways does the 386 serve as a bridge to future developments in personal computing? In cases where new developments have been made available in the meantime, I've tried to pick those most relevant to personal computing and test them.

First, A Little Background

Although the original piece described the features of the 386 in detail, a quick recap is in order for those readers who aren't already familiar with them. The Intel 80386 is a true 32-bit processor that typically runs at 16MHz. Although it's capable of running present-day MS-DOS software in exactly the same way as an 8-bit 8088 (IBM/PC-XT) or 16-bit 80286 (IBM/PC-AT), it does it much faster: 16-20 times as fast as the original XT; two to three times faster than (already fast) ATs. How these lightning speeds impact day-to-day computer use will be a main theme in this article.

The wonders of the 386 don't stop with speed. The processor is capable, when used with more advanced software, of making it practical to implement a quantum leap in user-friendliness and productivity. No more 640K RAM barrier, so (given a battalion of memory chips) you won't have to worry about the size of an application, how many memory-resident pop-up programs you've loaded or how many regular programs you want to run simultaneously.

The schizophrenia brought on by the PC's separate text and graphics modes can disappear, because the speed of the 386 makes it practical to run all applications within a graphical environment similar to that on the Macintosh. So instead of having to type in hard-to-remember codewords for commands, visual signposts (icons) and pull-down menus can be used. It also means you can easily mix words and pictures and present characters in any size or style.

Moreover, that same operating environment can be universally configured for all peripherals. In other words, any program written specifically for GEM or *Windows* automatically uses the full capabilities of your high-resolution color display, your plotter or your laser printer. No need to configure each application separately for each device. Finally, the 386 is engineered for multitasking. In plain English, you can do more than one job at a time. Most of us use more than one office tool at a time when we're not at our computers. So multi-tasking on a single-user micro contributes to the "naturalness" of using the machine and, therefore, to productivity.

Most of the prophecies in the original article have since come true. Nearly every manufacturer, including AT&T and Tandy (despite their announcement that they would wait to follow IBM's lead) has announced a 386-based AT clone. IBM, sure enough, decided to introduce entirely new systems architecture along with their 386-based PS/2 Model 80. But no matter. New 386 AT clones are introduced almost weekly and they'll all run the new operating systems (OS/2 & Presentation Manager) and programs written for the second-generation PS/2 IBM machines. To be sure, IBM will add some non-compatible enhancements of its own to the new OS, but its announced products are mainly designed to bridge with software on larger IBM systems.

The best news is that prices have tumbled. In '86, the least expensive base 386 box (case, motherboard, RAM, power supply and 1.2Mb floppy) sold for $3,500. Today, you can buy the same configuration from several vendors for about $2,000.

Getting It All Together

It all started when a company then called RAM Systems sent me a new 386 motherboard for testing. Once installed in an AT chassis, their board proved to be super-reliable and (surprising, so early in the game) problem free. It ran every bit of the software in our library without a hitch, too. Unfortunately, no sooner was I ready to sit down and write about it than RAM Systems sold out to a larger company, disappearing clean out of sight in the process.

Having to start all over again gave me the opportunity to pick and choose components from the ground up. There may be no such thing as a computer for everybody, but the ideal was a machine that made the best compromises for the largest group of users. That meant that it had to be just as good at graphics as text, and that it had to display "business-level" color as well as monochrome. A fixed disk drive is a given in any "power" system. This one had to be capacious enough to work with large applications, database and graphics files and quick enough not to bottleneck an otherwise fast system.

An Enhanced Graphics Adapter (EGA) seemed the logical choice for the best compromise between cost and versatility, while the use of a multi-scan monitor seemed imperative — if, eventually, it became necessary (or desirable) to be compatible with the PS/2 series' analog VGA display standard.

Consideration of VGA compatibility was only part of the scheme for making this configuration compatible with the widest possible range of IBM-endorsed "standards" for add-on hardware, disk formats and operating systems. In order to maintain maximum versatility and to protect one's investment, the system should work with as much of the PC's hardware as possible while providing for compatibility with at least the most important aspects of the second-generation PS/2's requirements.

Keeping all of the above in mind, here's how I configured the machine and why I picked the specific components.

System vendor: Micro 1. They showed a keen enthusiasm for the project and were willing to bust their buttons to support it and keep me educated as to the availability of new developments. Among local clone vendors, they are a major player which configures, repairs and supports a wide range of PC-clone systems. One of those systems happened to include the motherboard and drive bay configuration we wanted.

Motherboard: Intel 80386/AT. This board was picked mainly on the theory that the maker of the processor would be the manufacturer least likely to evaporate in the heat of competition, because it used the most popular clone BIOS (Phoenix) and because the board's architecture is safe to the point of being boring. Several other board makers (notably Compaq and PC's Limited) use various methods of accessing very high-speed memory chips in order to capitalize on the performance potential of the 386. I was willing to sacrifice a small amount of performance for problem-free use of memory boards (and other cards) designed for the XT and AT. So far, not a single expansion card has failed or turned flaky on account of not being able to keep up. The higher performance boards may make more sense in multi-user systems, single-purpose machines (such as dedicated CAD workstations) and as file servers on a network.

The first board installed had two major problems, both of which have been resolved in current versions: (1) The 80387 math co-processor was incompatible and would cause the ROM/BIOS chip to fail. (2) The initial version of the Phoenix 386 BIOS wouldn't support the use of

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Copyright ©1987 by Ken Milburn. All rights reserved. Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including PCWorld, InfoWorld, Computer Graphics World and MicroTimes. He also does system configuration for small businesses. He can be reached at (415) 331-6926 or by sending E-mail to (ken) on the WELL, (415) 332-6106.

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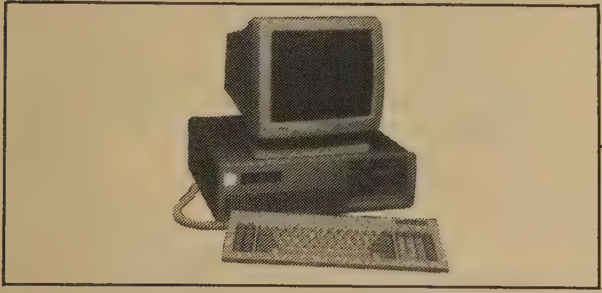

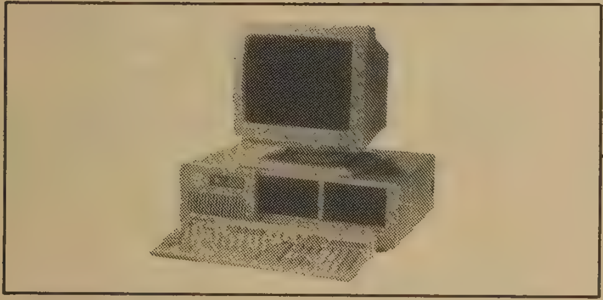

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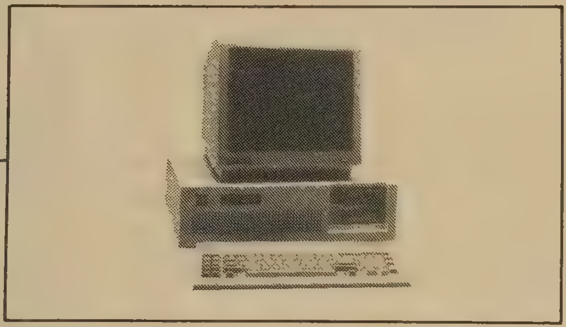

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PS/2-compatible 3.5" diskettes.

Serial/Parallel Ports (I/O card): Everex EV-170A Mini I/O ($90). The motherboard comes with a built-in parallel printer port and a serial port, but we needed at least another serial port. After having difficulty setting communications protocols in several cheap Taiwanese cards, I settled on Everex's Multi/IO and disabled the ports on the motherboard. The Everex board is inexpensive and comes with two serial and two parallel ports that can be easily set up for any I/O address or protocol. Furthermore, great documentation and an on-disk set-up tutorial and diagnostics make this one of the few I/O boards worth having.

Memory expansion: For reasons I'll explain later, 386es are most useful when there's at least an extra 2Mb of RAM installed above the basic 640K.

There are numerous alternatives for doing this. For general-purpose use, I felt price was more important than performance. Therefore a 3Mb **Everex (EV 159)** was chosen because it could be configured either as AT extended RAM (important for running *Windows 386*, OS/2 or *DesqView*) or as Lotus/Intel/Microsoft Expanded Memory (EMS). The AST/Quadram EEMS subset costs more, but does little for a 386-based computer since both *Windows 386* and *DesqView* can load themselves into extended memory. From a performance standpoint, true 32-bit memory is the best answer. The problem is cost: you have to buy it from the manufacturer of your motherboard, and being a captive buyer means paying a premium.

Floppy disk drives: TEAC 5.25" 1.2Mb; TEAC 3.5" 720Kb. The 5.25" drive was chosen for two reasons: (1) It does a very good job of reading, writing and formatting *all* IBM-standard formats. That eliminates the need for a separate 360K drive for transferring data to and from PCs and XTs. I've used a Toshiba drive successfully in this way, too. (2) Price and availability. TEAC drives usually sell for a bit less and are so plentiful you'll never have trouble replacing a broken one.

The 3.5" drive is 720Kb because, at the time, there simply weren't any of the 1.4Mb types found in IBM's pricier PS/2 models. I wanted a 3.5" drive in the system so I could exchange files directly with anyone who had a PC-compatible laptop or any of the PS/2 systems. This is obviously the coming standard for floppy disk drives, so it bridges to the future. Besides, Macintoshes, Atari STs and Amigas all use similar formats, so you can transfer data back and forth with the aid of the proper file transfer software. The TEAC was chosen because it was the only one of several brands we tried that plugged in and ran as a 720K drive B:. No special drivers, possible I/O address conflicts or configuration hassles. At a mere $150, this drive is worth its weight in gold.

Disk controller: Western Digital. Simply the most commonly-used controller for AT systems in the industry. Its popularity makes it easier to track down controller problems, should they occur. An RLL-type could have formatted the hard disk at 50% greater capacity, but my feeling was that these controllers might decrease the lifetime of the drive.

Instead, I used the **Awesome I/O Card.** It is neither a disk controller nor an I/O card for printer and modem ports. It's a combination battery-backed disk cache and data-compaction board. Without optional enhancements, it cut the drive access by better than 85%. At five milliseconds, access is so fast you can hardly tell the difference between RAM operations and disk reads and writes. The caching scheme should also improve the reliability of the drive itself, because head movement is cut by 85%. But the best news of all was the 37% increase in drive capacity afforded by the Awesome card. What started out to be a 70Mb drive now holds 105Mb worth of data. If you bought a 100Mb hard disk instead of a 70Mb drive, the extra capacity could easily cost as much as the Awesome. I'm impressed.

Installing the Awesome is duck soup: Plug it into a 16-bit slot, install some drivers in your config.sys file. Watch Lotus load before you can get your finger off the return key. Look, Ma! No cables! No dipswitches!

Fixed disk drive: Atasi Model MT3085 70Mb 25ms plated media drive. Before the Awesome card became a reality, fast access seemed a paramount consideration in picking a hard drive for any computer as quick as this one. The Atasi claimed the fastest access of any drive in its price range — nearly twice as fast as the 39ms drive in IBM's 20MB AT.Plated media was also a consideration if RLL formatting seemed desirable at some future date.

The drive was delivered in person by a very nervous Tandon representative. During his flight up from L.A., it seems the drive had fallen from the overhead luggage compartment and landed in the passenger aisle. Nevertheless, the drive installed and formatted without a hitch — a good testimonial to its reliability.

Monitor/Display Card: Paradise Autoswitch 480. NEC Multisync. Both these items were chosen for proven performance, popularity and reliability.

The Paradise card comes with an exceptionally long list of 640X480 resolution applications drivers. This resolution is not only significantly sharper than the standard EGA 640 X 350, it produces a square dot. So images on the screen are proportionately the same as the image on a 300 dpi laser printed page.

Ease of configuration was also a major factor in choosing the Paradise card. As its name implies, it automatically senses which display mode an application requires and which monitor it's connected to. Although dipswitches and jumpers are present on the board to force specialized configurations, most users will simply "plug and play."

There are already some PS/2-compatible VGA boards on the market, mostly for about $100 less than IBM's. I wanted to wait for Paradise's Pro VGA, which is both BIOS and hardware register compatible with VGA. It can also produce 256 simultaneous colors in the high-resolution VGA mode, provided you have software written to run this way. The card won't start shipping until some time after this article was written.

Mouse: Logitech. Any system that incorporates graphics needs a pointing device. With *Windows* emerging as the operating system user interface of choice, a Microsoft mouse is bound to be one of the cheapest and most easily configured. The problem with the MS Mouse, as I see it, is that it isn't all that easy to program for applications that weren't written to work with a mouse. The Logitech mouse is easy to program, has an extra button for added flexibility and is 100% MS Mouse-compatible. It costs 30% less than Microsoft's offering, too. No contest.

The Practical Realities

The system, as I've described it here, provides a great platform for almost any kind of single-user computing. Although it's true that there's still no operating system or software that fully capitalizes on the power of the 80386 CPU, the raw speed of the machine does make it an appropriate vehicle for running multiple PC/MS-DOS applications simultaneously — and within a purely graphical environment like *Windows 386*.

In spite of the fact that neither OS/2 nor any applications software has yet been introduced that takes full advantage of the 80386, there are great benefits to be gained from using *DesqView 2.01* and/or *Windows 386*. Either system makes it possible to run multiple applications at the same time, even if they total more than 640K. Since the 386 incorporates the hardware to emulate both the AST/Quadram Enhanced Expanded Memory System (EEMS) and Lotus/Intel/Microsoft EMS 4.0, you can use any memory board that can be configured as AT *extended* memory. I've run both these environments successfully on the machine described in this article.

As a reviewer of both software and hardware, I've had the opportunity to throw almost everything at this machine but the kitchen sink, including *AutoCAD*, *AutoShade*, *Ventura Publisher*, *Lumena* and a variety of less demanding "business" programs. I've also plugged in internal modems, fax cards, a PostScript laser printer, scanners, digitizing pads and a host of memory cards and backup systems. Unless I goofed on the installation instructions, all of them worked without a hitch. ☐

386 RESOURCES

Intel motherboard, case, power supply, keyboard, TEAC floppy drive, 80287 math co-processor, Western Digital AT controller.
MICRO 1
557 Howard St.,
San Francisco, CA 94105
(415) 974-6593

Atasi Model MT3085 25ms 70Mb Hard drive. This drive is sold only to OEM customers, who in turn, provide it as an upgrade kit or include with a computer. Tandon, Atasi's parent company, can provide further information.
TANDON COMPUTER CORP.
269 Mount Hermon Road
Scotts Valley, CA 95066
(408) 438-8729

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Fremont, CA 94539,
(415) 490-2201

Awesome I/O card:
CSSL, INC.
909 Electric Ave, Suite 202
Seal Beach, CA 90740
(213) 493-2471

NEC MultiSync monitors:
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Elk Grove, IL 60191
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Paradise EGA and VGA cards:
PARADISE SYSTEMS, INC.
217 E. Grand Ave.
South San Francisco, CA 94080
(415) 588-6000

Logitech C7 mouse (several models):
LOGITECH, INC.
805 Veterans Blvd.
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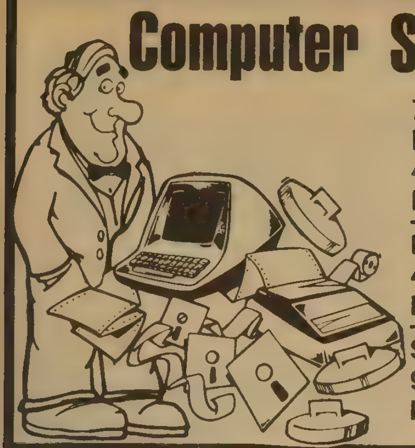

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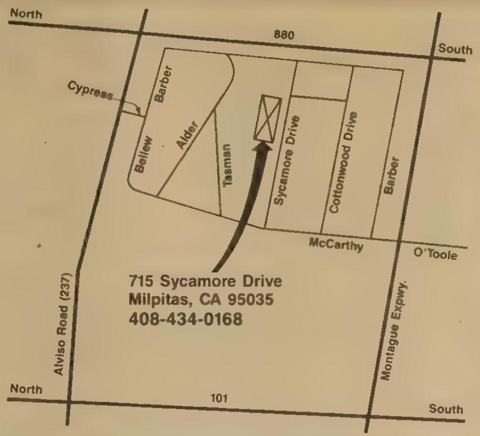

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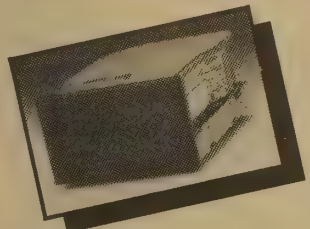

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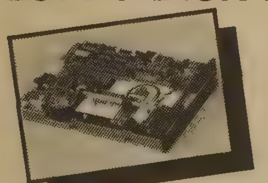

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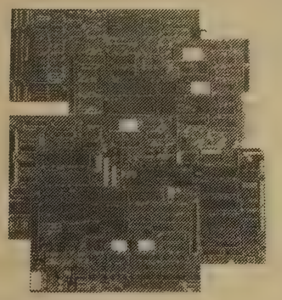

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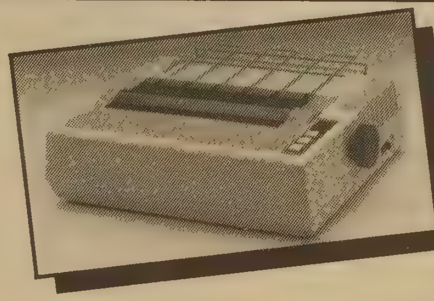

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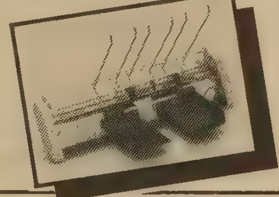

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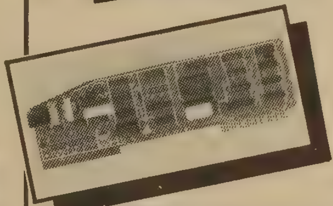

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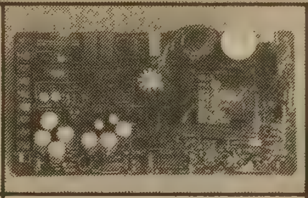

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AppleFest Report

By Mike Markowitz

> *"...You can never tell the dancer from the dance, And you can never part the singer from the song; We've come so far together, This must be where we belong...."*
>
> **– From Apple's Tenth Anniversary theme song**

The AppleFest show in San Francisco (September 18–20) coincided with the first anniversary of the Apple IIGS. This was the first trade show in three years devoted entirely to the world of Apple II computing. The show was generally well-organized, although the solid row of Macintoshes in the press room offended some true believers....

John Sculley, Apple's chief executive, announced at a banquet for developers that IIGS production has passed the 200,000 mark, and sales now exceed the IIe and IIc *combined*. In fact, the IIGS is outselling any of the three Macintosh models. In a nose-to-nose competition with IBM, for a large order from the Indianapolis public schools, the IIGS beat out the new PS/2 model 25. The GS has been a sleeper, but it's beginning to wake up. Apple is beginning to put some promotional muscle behind the machine, including TV advertising. Nearly 100 software packages that take advantage of the GS' sound and graphics have been shipped, with at least 30 more expected by Christmas. Over 90% of the buyers are getting machines with an RGB monitor and 512K of RAM, or more.

Apple has announced a free ROM upgrade and replacement of the (sometimes) flaky Video Graphics Chip for IIGS owners. At this writing, however, a spot check of Southern California Apple dealers failed to locate any who had the parts yet.

I asked Del Yocam, Apple's Executive VP, why we've had to wait so long for a true Apple laptop, when all our MS-DOS friends are running around with cute little Toshibas, NEC Multispeeds and Datavue Sparks. He said the market just wasn't ready yet, and that quite a few prototypes had never made it out of the lab.

Strategically, the most significant new IIGS product released at AppleFest was Apple's new System Disk (v. 3.1), which, at last, gives us a true Finder, elegantly programmed by Dan Oliver and Cheryl Ewy. ("Finder" is the Macintosh name for the icon-based, mouse-driven windowing environment that lets the user open, close, move, copy and organize files by pointing and clicking). The new system disk, like most IIGS software, is excruciatingly slow to load. This is a powerful argument for putting the whole thing in ROM someday, like the Atari 1040 ST operating system....

Apple also released a new GS Icon Editor for software developers, making it easy to create customized symbols for applications and files. Developers are finally starting to receive the professional tools—compilers, translators and utilities—needed to write affordable high-performance software for the IIGS.

In the hardware arena, the hit of the show was the PC Transporter, from Applied Engineering. Code-named "Little Blue" during its prolonged gestation period, this electronic marvel snaps a complete PC-XT clone into almost any slot of your Apple II+, IIe or IIGS. It uses a V-30 microprocessor, humming along at 7.16 MHz. It's socketed for an 8087-2 math coprocessor and 768K of RAM. The card costs almost as much as a no-name PC clone ($400–$600 depending on how much RAM you want), but it cleverly uses most of your existing peripherals. Apple 3.5″ drives, for example, can be used to format 720K MS-DOS disks, and your ImageWriter will work like an IBM Graphics Printer. We'll review it here as soon as we get one (promised to ship in November).

Another notable bit of hardware was the Zip Chip, developed by Dr. Frederick Peace. This $130 replacement for the 6502 or 65C02 microprocessor runs at 4 MHz with its on-chip cache memory. Most Apple II programs get a 360% speed boost. A IIGS version (replacing the 65C816) is reportedly under development.

I asked one Apple techie guru how fast the IIGS microprocessor could run (its present speed of 2.8 MHz makes for some agonizing delays when opening or closing applications). He said 6 MHz was no problem, and test articles had run as high as 8MHz. Plenty of scope for enterprising turbochargers....

WordPerfect is almost ready to ship version 2.0 for the Apple IIGS (see our review of version 1.0 in the September issue of MicroTimes). The new version includes pull-down menus and mouse scrolling, a great improvement.

There is still a surprising amount of life left in the IIe and IIc, as developers begin to break out of the 64K straitjacket of compatibility with the old Apple II+. *Springboard Publisher* is an astonishing example of what can be done under ProDOS in 128K. This is a poor-man's *PageMaker*, with integrated word processing, graphics and page layout. You can see a rough version of an entire page before printing it (text blocks are shown as ruled lines and graphics blocks are dark rectangles). A laser printer driver, a disk of style sheets and three disks of clip art will be sold separately. Springboard was showing a late beta-test version, since the package was not ready to ship at showtime.

Beagle Brothers weighed in with a spectacular new array of *AppleWorks 2.0* enhancements, the TIMEOUT series, including a set of desk accessories, spell checker, sideways spreadsheet printer, graph maker and macro utility. Priced at $50 to $90 each, these may be beyond the reach of struggling *AppleWorkers*.

There were a lot of new games on display from the heavyweight publishers (Activision, Mindscape, Brøderbund, Electronic Arts), but not many new ideas. Even more discouraging was the dearth of fresh thinking in educational software, which has always been Apple's strongest suit. We'll just have to wait for Apple's rumored CD-ROM product, perhaps some time next year....

Meanwhile, Apple's Classroom of Tomorrow (ACOT), a demonstration project in many diverse public schools, is showing what good teachers can accomplish in a "computer-saturated" environment. Each teacher and each student in the program receives a computer at school and another for use at home. Apple brought some of the kids from Memphis to the show. It was the first time some of them had ever traveled on a plane....

But that's another story.... ☐

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1987 by Mike Markowitz.

Experts' Choice

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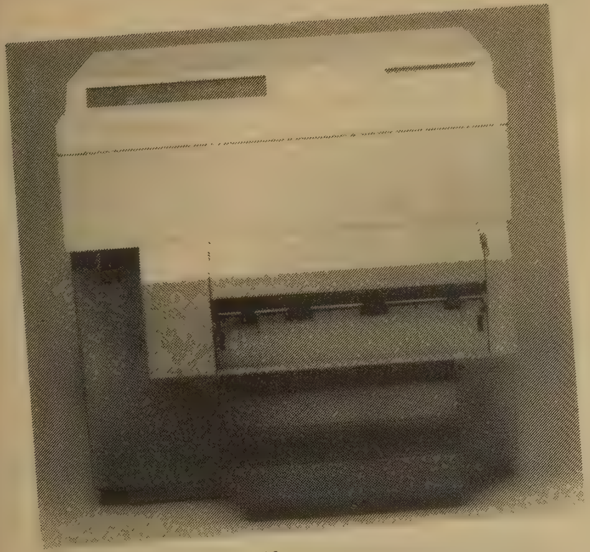

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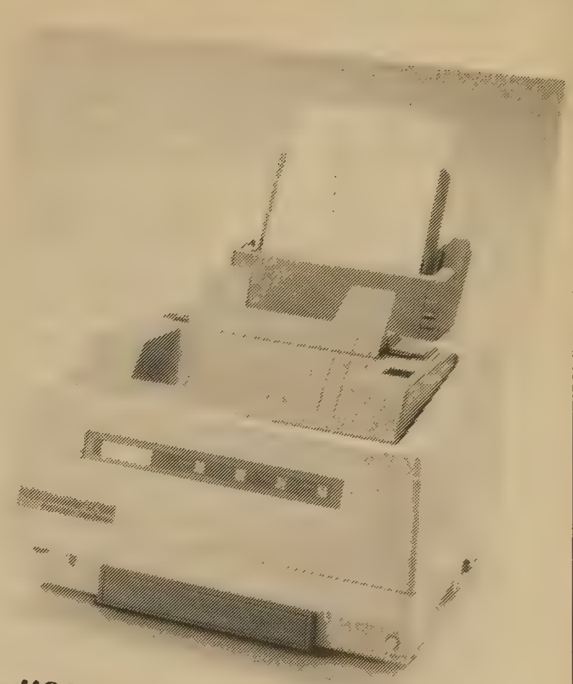

- **NEC Silentwriter LC-890**
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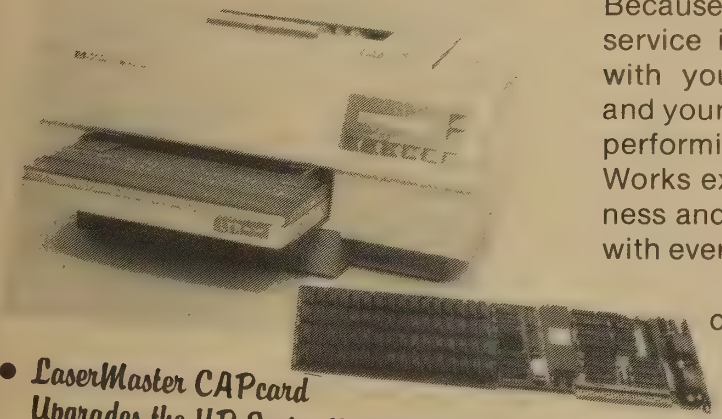

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News And Changes

By Mary Eisenhart

Before we get to our monthly correspondence, a little message from the **Bureau of Emotional Preparedness:** Folks, as you may have noticed, our user group listings are getting a little unwieldy. More than that, human nature being what it is, there seems to be a positive epidemic of bulletin board operators who fold their tents and depart without bothering to notify us, causing great annoyance for the luckless owner of their new phone number and the board's would-be callers. It is not unusual these days for us to receive a call from some public-spirited soul who gives us a list of ten or so now-defunct boards running happily in our listings. This kind of inaccurate information hurts everybody.

Therefore, after looking at various ways to continue to maintain timely, accurate and manageable listings for your benefit while eliminating what we suspect is multiple K of bad info we have decided to take the following steps.

We're going to start from scratch next April at the West Coast Computer Faire. If you'd like your group or board to be included, send us a new listing using the form in this issue. The deadline is February 1, 1988. All those who do not send us a new and updated listing will have their listings removed — and thousands of Faire-goers won't find out about them.

In the future, we'll ask readers to update their listings on a yearly basis. In the meantime, as the year ends, you might start thinking about sending us a new and current listing soon. Please try to keep your message to around 15 words or so. And if you know for a fact that one of our listings is inaccurate — especially if you know for a fact that people are being inconvenienced — please call us at (415) 652-3810 and give us the information; the offending data will be removed as quickly as the exigencies of print allow.

And now for some *accurate* info, to the best of our ability...Phil Sih and John Little of The Portal System are making you an offer they hope you won't be able to refuse — unlimited use of the system for a flat fee of $10 per month. Portal, you may recall, is a conferencing system based in Cupertino and running easy-to-use software on speedy Sun workstations. It offers a variety of discussion groups, plenty of room to start your own, plus email facilities, usenet access, and a uucp gateway. Call (408) 973-9111 for information.

Meanwhile, what's arguably the Bay Area's most multifaceted online conversation continues on **The WELL** (415/332-6106 data, 415/332-4335 voice, $8/month, $3/hour). At presstime, for example, the **Macintosh** conference was discussing Famous Euphemisms (aka Lies), October's annual **Hackers Conference** (article next month) was being recapped in the **News** conference, the **Work** conference was enjoying a lively discussion of occupational burnout, and the tie-dyed hordes of the **Grateful Dead** conference were considering everything from **Jerry Garcia**'s Broadway shows to video releases to community involvement. If there isn't already a discussion of your favorite subject, you can always start one, and new users with a wide variety of interests arrive daily.

Ari Davidow, who co-hosts the WELL's **Jewish** conference, sends along the news that the **Hebrew Users Group** (which, as you may remember, supports the use of Hebrew and Hebrew-based languages on microcomputers) now has a quarterly newsletter ($7.50 for four issues) and can be reached by calling **Jack Love** at (415) 848-7793; US Mail can be sent to HUG, c/o Berkeley Hillel, 2736 Bancroft Way, Berkeley, CA 94704.

Another WELLbeing, **Bob Bickford,** who hosts the **Liberty** conference, is also the sysop of the **Liberty Bell BBS,** dedicated to issues of Libertarian and New Age politics. The Liberty Bell, according to **Mike Iddings** of the **Santa Clara County Libertarians,** operates 22 hours a day, seven days a week at (408) 243-1933, 8-N-1, 1200/2400. It's also FidoNet node 143/6. Online Libertarians and other connoisseurs of political debate are invited.

Also on the political front: **David Creighton** of Berkeley would like to get the word out about **tecNICA.** tecNICA volunteers, he says, donate two or more weeks of their time to supporting Nicaragua with their computer, engineering, or other skills. If you're interested, please contact David at (415) 848-0292.

Post-AppleFest info: **Bob Sherman** of Miami invites you to check out **Miami's Big Apple,** now in its seventh year of operation as an online Apple users' group. It features great Apple support and is accessible using PC Pursuit. The board runs 24 hours a day at (305) 948-8000; parameters are 8-N-1, 300/1200.

Down in Redondo Beach, the erstwhile **South Bay Apple III User Group** has gone through a few changes and has been reborn as the **South Bay Apple Mac Club. Gary Fortune** sends us this news, adding that meetings are on the last Wednesday of the month at varying locations. He invites your calls to his voice number (213) 316-7738, and also invites modemers to check out the club's BBS at (213) 534-4311.

Those interested in the practical implications and opportunities of Artificial Intelligence and Expert Systems in today's business world are invited to check out the **AI-Expert System For Business** group. You can call **George Polzer** for more information at (415) 564-6664; there's currently a quarterly newsletter, and a BBS is in the works.

Devotees of the deathless Commodore 64 who want to explore the possibilities of the GEOS operating system, there's good news for you. **Gary Sydeski** of Lakewood sends word about **GEOS Users,** a group dedicated solely to helping C64 and C128 users learn more about GEOS. All information and disks are exchanged by mail, so if you don't happen to live in Lakewood you can still take advantage of this club. Gary says the fledgling group has been publishing a monthly newsletter since March and already has over 70 members. Write GEOS Users, 21634-A Belshire Ave., Lakewood, CA 90716 for more information.

Another new group, this one for the Amiga, is starting in Bella Vista, CA. **David L. Murphy,** president of the **Northern California Amiga Club,** says that the group is still meeting at the homes or businesses of individual members and looking for a permanent meeting place; meanwhile, Northern Amiga users looking for opportunities to explore their machines and to give or receive support are invited to contact the club at P.O. Box 54, Bella Vista, CA 96008, (916) 472-3237.

I'd like once again to offer heartfelt thanks to the many faithful correspondents from groups all over the state (and elsewhere) who keep this news/communications/outreach process going. Your efforts are appreciated, and further communiques invited.

Keep the cards and letters coming to *MicroTimes* User Group Network, 5951 Canning Street, Oakland, CA 94609. And send that email to **microx** on The WELL, (415) 332-6106. See you next month. ☐

BULLETIN BOARDS

065

Remote Bulletin Board. (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss. .

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot..

Bertha Board. (209) 239-9853. 8-N-1, 300/1200/2400 baud. 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

Motherload-64 BBS. (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

305

Miami PC Users Group BBS. (305) 621-7534. 2400 baud, 24 hours. PC-Pursuitable. Sysops: Ken Burch and Bob Ash.

Miami's Big Apple. (305) 948-8000. 300/1200 baud, 24 hours. Online Apple users group with heavy Apple support. PC Pursuitable. In seventh year of operation. Sysop: Bob Sherman.

312

Feminist BBS. (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 300/1200/2400 baud, 8/N/1, 24 hours. Sigs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all Sigs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

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Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 244-5055. 300 baud, 24 hours, BBS protocol. Conversations and e-mail. Ten lines of multi-user interaction. Netowrked nationally. Sysop: S.W. Heissain.

Matchmaker San Jose. (408) 249-4566, 300/1200 baud, 24 hours, 7 days, 4 lines in hunting. 300 plus calls a day. Matchmaker San Jose is the ultimate pen pal system. Make a date, meet a friend, have the time of your life. Nationally networked. Type "mm" at login. Sysop: The Matchmaker.

Dragon Flight. (408) 353-3703, 24 hours, 300/1200 baud. "The Social System." Over 15 theme oriented message bases. Online quizzes. New remotes wanted! No fee. All ages and computer types welcomed! Sysop: Bronze Tooth.

Vietnam Vets-The LooneyBin. Nancy and Todd Looney, sysops. Dedicated to 'Nam vets, their wives, lovers, and friends. Good friendly conversation plus referrals and counseling. Online 23 hours 3/12/2400. (408) 293-7894. FidoNet #143/27.

Public Domain Software Special Interest Group (PDS-SIG) BBS. San Jose, CA. (408) 270-4085/4086, 8-N-1, 1200/2400 baud, 3 nodes, 24 hours. Features over 175 meg of up to date public domain shareware and supported software. Over 25 meg of games, 53 multi-topic directories, 5 mini-BBS conferences: Focal Sysop, Chat, Software Technical and the famous THE-BOG. Registration required. Annual membership available with extensive privileges and free software. Find the latest and most popular programs and shareware in our vast library of files. Second to none.

The Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

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Computer Tyme-NUG-SV. (408) 732-2353. 300/1200/2400 baud, 8-N-1, 24 hours. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

INTEREX User BBS. (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/suggestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

Comp-U-Ease BBS. (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. PC Board utilities. Sysops: Stuart Smith and Eric Smith.

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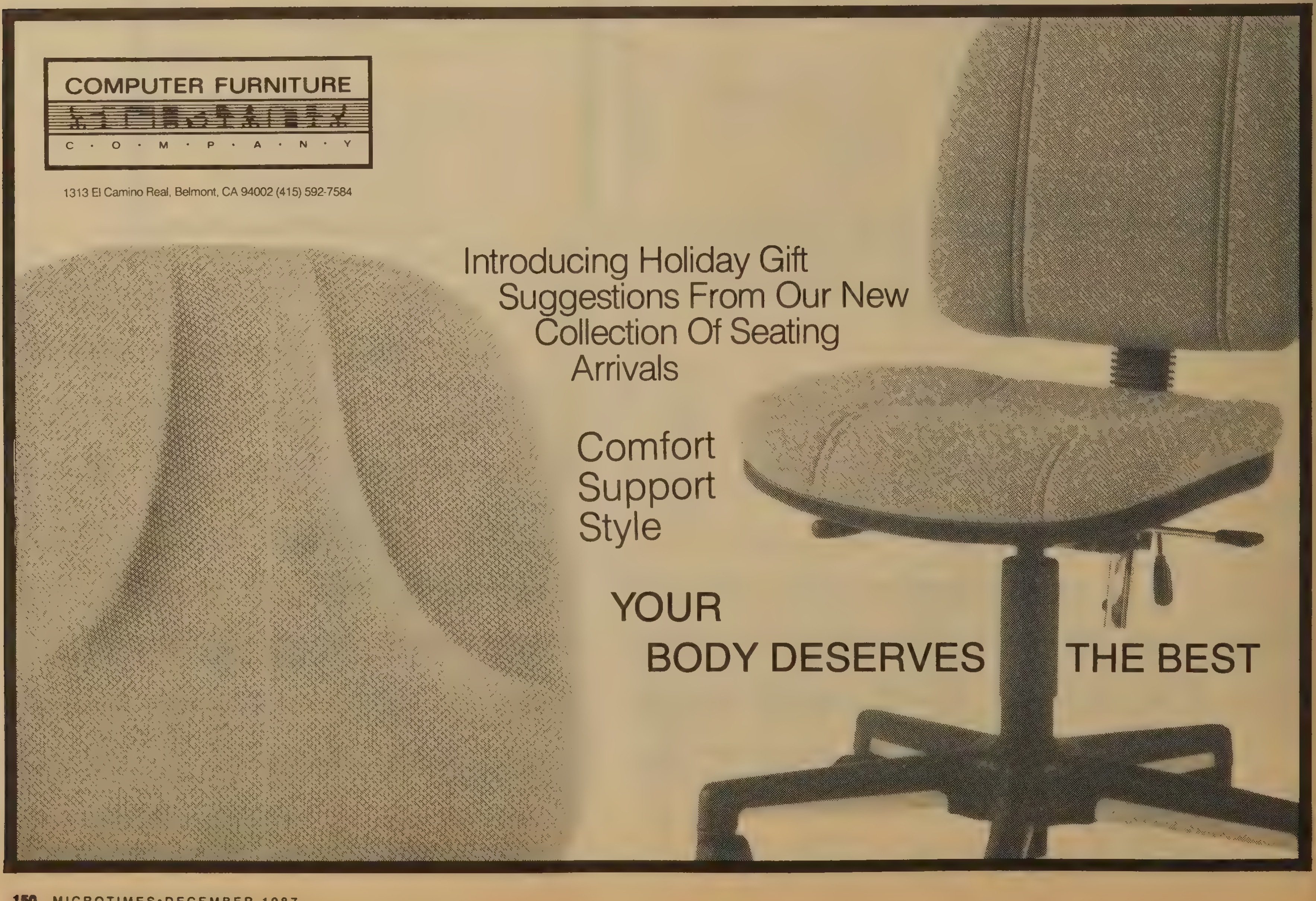
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MicroTimes Free User Group/BBS Listing

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(Include group/BBS name, types of machines supported, contact information, and a brief description. Please limit message to 15 words)

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ComputerTyme-NUG-SV. (408) 732-2353. 300/1200/2400 baud. 8-N-1, 24 hours. Sysop: Gary Alaki.

PC-Connection. (408) 255-5810. 300/1200/2400 baud. 8-N-1, 24 hours. All users welcome. Featuring IBM, MAC, Epson PX-8 and CP/M files online. UL/DL. Sysop: Neil Lieb.

The Pacific Exchange. (408) 946-8562. 1200 baud, 24 hours. Sysop: Ed Peterson.

Liberty Bell. (408) 243-1933. 300/1200/2400 baud, 8-N-1, 4:00 am to midnight. Libertarian/New Age politics board. Nat'l POLITICS echo. FidoNet 143/6. Sysop: Bob Bickford.

415

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, 300/1200 baud.

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MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

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Open Campus BBS (415) 895-0135. Operated by San Leandro High School and Apple Eaters Users Group, 5 meg, 20 message bases plus library. 24 hours, 300/1200. Sysop: Bob Shayler.

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Entrepreneurs BBS: Official BBS for Community Entrepreneurs Organization (CEO), and XT Compatible Club. 1200/300 baud. 24 hours, 20 megs., 8 bits, no parity. Entrepreneurial networking and information, brainstorming, and on-line support for IBM XT clones. Sysop Edwin Rutsch. (415) 552-9070.

APT Action BBS. C64 board dedicated to exploring on-line entertainment. Free ACTION-AUT software. 24 hours, 300 baud, (415) 322-3213.

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520 ST Atari BBS (415) 783-5545, 24 hours, 7 days a week. 300/1200, 8 data bits, 1 stop bit, no parity. Official Sixteen Bit Atari BBS of the San Leandro Computer Club, this system offers full support for all Atari ST system users. Currently running on a ten megabyte hard disk system, the system has many special interest areas including graphics, C, Pascal, LOGO, Basic, MIDI / music, communications and more. Supports four types of XModem/Modem7 and Kermit protocols. Call today! Sysop: Michael Curry.

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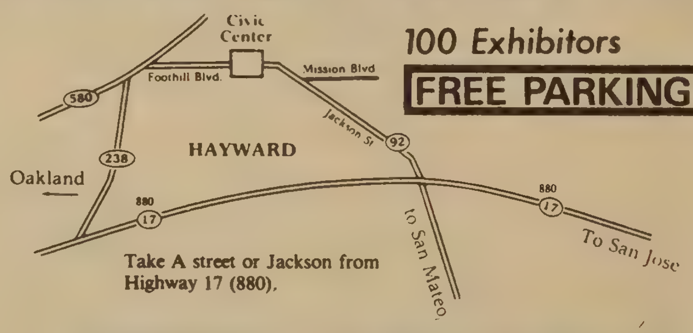

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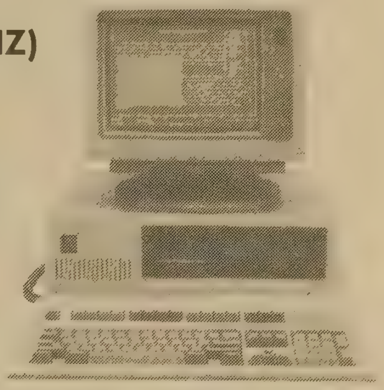

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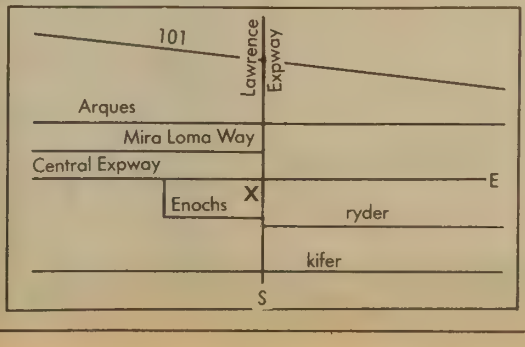

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Amiga Addicts Anonymous BBS. (415) 222-9416/9148 "BUD-LINX." 24-hours, Xmodem, 300/1200 baud, N/8/1. Sysop: Randy Spencer.

Aardwolf Express Family Forum. (415) 651-4147. 24 hours a day, 7 days a week. 300/1200/2400 baud. Located in Fremont CA. System offers: *Infomat*, an electronic computer magazine; Showcase, shareware and demonstration programs download; complete King James Version of Bible online; Discovery (Christianity); Friends (user profiles and interests) and user opinion polls. Sysop: Veit Anton Johnson.

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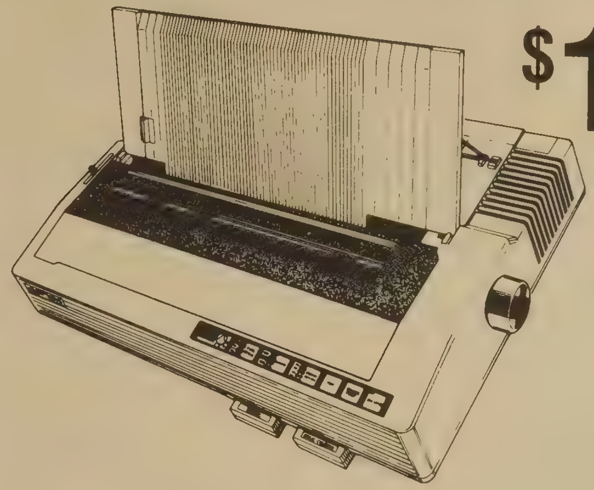

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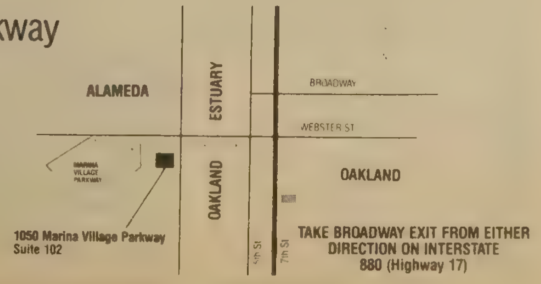

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Autocad RBBS. (415) 547-5264. 300/1200/2400 baud, 24 hours, 7 days. Offering a communications forum, twelve megabytes of Autocad drawing files, Lisp macros, fonts, symbol libraries and related programs available for downloading. Largest private bulletin board dedicated to Autocad in the United States. Special prices on modems with membership.

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Lillypad. (415) 581-9452. 300/1200/2400 baud, 8-N-1, 24 hours, 7 days. A great new BBS. Real time game playing in color for Commodore. Supports VIC, 20, 64, C128, Amiga, CP/M.

Jandel Scientific. (415) 331-6408. 1200 baud, 8-N-1, 24 hours. The bulletin board is basically for registered owners of Sigma-Plot and Sigma-Scan, although people who are interested in what our programs can do should call our bulletin board and leave their name, address, phone number and product of interest. We welcome calls concerning any type of scientific applications programs. Our bulletin board also has a sample graph file that can be output to a plotter. Any questions or comments can be sent to our sysop. Jan.

AT/XT Clone User Group BBS. (415) 552-9070. Sysop: Edwin Rutolt.

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Richmond OPUS. (415) 620-6500. 300/1200 baud. 8-N-1. 6:00 am to 6:00 pm daily, 24 hours on weekends. City of Richmond BBS. Public information on city activities. Download information files.

SFPC User Group BBS. 1200/2400 baud, 8-N-1, 24 hours. IBM and compatibles, technically oriented. No fee. Sysop: Richard Couture.

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FIDO BBS. (415) 574-7914. Voice: 349-3602. Sysop: Franz Hirner.

601

Bo's Houseboat. Node 1: (601) 992-4111. Node 2: (601) 992-4338. 300/1200/2400 baud. 8-N-1, 24 hours. RBBS-PC, MS-DOS, IBM. Runs on IBM XT clone, 88 meg hard drive, Sony CD-ROM 512 MG. Over 15,000 files for downloading. Sysop: Bo Trotter, Brandon, MS. 39042.

702

Public Domain Software Interest Group. (702) 794-3665. 24 hours, 300/1200/2400 baud, 8-N-1. Public domain software available for downloading, message board, and user supported donations of software. Sysop: T. Heisserman.

707

Napa Valley RBBS / RCP / M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Survival Communication Forum. Fido 125/7. Focusing on preparedness and self-sufficiency. Multiple message and file areas. A MedNet member system featuring weekly CDC reports, medical text and news files. Open to all. 23 hours daily, 300/1200 (707) 545-0746. Don C. Kulha, Sysop.

R.A.G. (Redwood Atari Group) BBS. 300/1200, 24 hrs. (707) 539-8889. Sysop: Bill Marlin.

STATE BBS ST and 8 bit Atari. Supports all Atari computers. On line surveys, public domain software, discussion and a built in adventure game (if you can find it). 300/1200 baud, 24 hours a day, full duplex. Sysop: Mikkel Lawrence. (707) 585-2194.

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Short Wave Listener's Guide BBS. (707) 526-0924. 300/1200 baud, 8-N-1, 24 hours. Four boards: Pub Discussion, SWL Signal Reports, Hints & Tips, Hardware Corner, Text files: Eng Lang Bcast Skeds. Sysop: Dave Willey.

813

Blithe Manor. (813) 839-0734. 1200 baud, 8-N-1, 24 hours. Multi line. Adult dating. Sysop: Bill Rucker.

916

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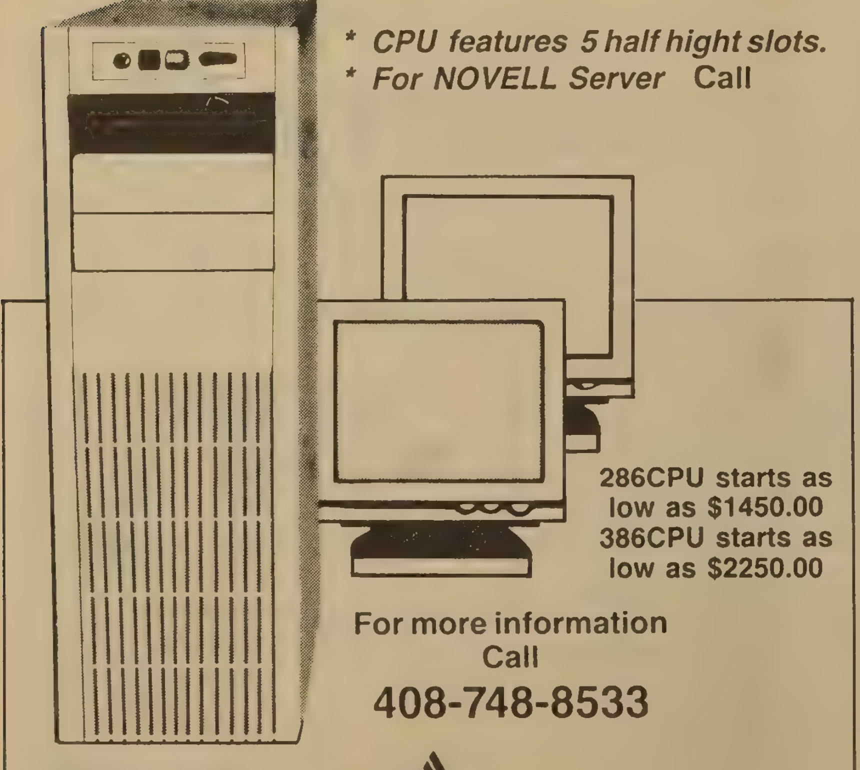

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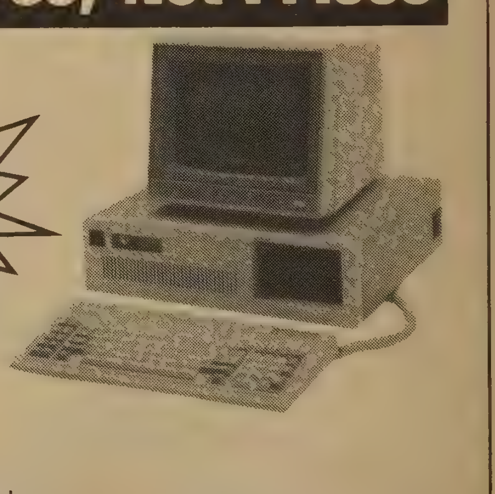

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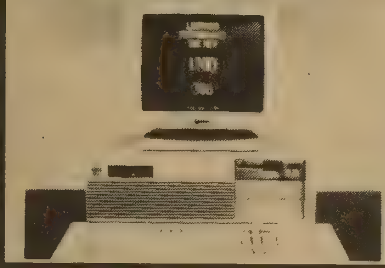

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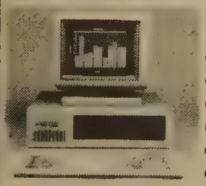

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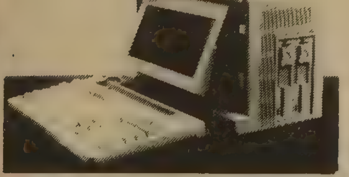

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Dynasty BBS. (916) 685-8690. 300/1200/2400 baud, 8-N-1, 24 hours. ComputerRooters Bulletin Board. Sysop: Henry Hoover.

The City Of Grey. (916) 423-3987. 300/1200 baud, 24 hours. Atari 8 bit BBS. Sysop: The Sheriff.

CoCo BBS. (916) 486-1594. 300 baud, 7-E-1, 24 hours. Sysop: Bill Drennon.

ASSOCIATIONS

Community Entrepreneurs Organization (CEO). Business networking group meets in nine chapters around the Bay Area. Share information on tech and non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

Computer Professionals For Social Responsibility. P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay). 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. 609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Core. Meets Wednesdays at 7:30 pm. Call Pete at (415) 952-9309 for address and info.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area MicroProcessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Byte Hum. A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

Society for Technical Communication. STC is a professional organization dedicated to furthering the art of technical communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-8:00 pm; call Sarah Collings, (415) 383-9631 for info or write to P.O. Box 2706, San Francisco, CA 94126.

North Bay Users Group (NBUG). Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

Robotics Society of America. Dedicated to disseminating information about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564.

Silicon Valley Computer Society. Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

PicoNet. A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call

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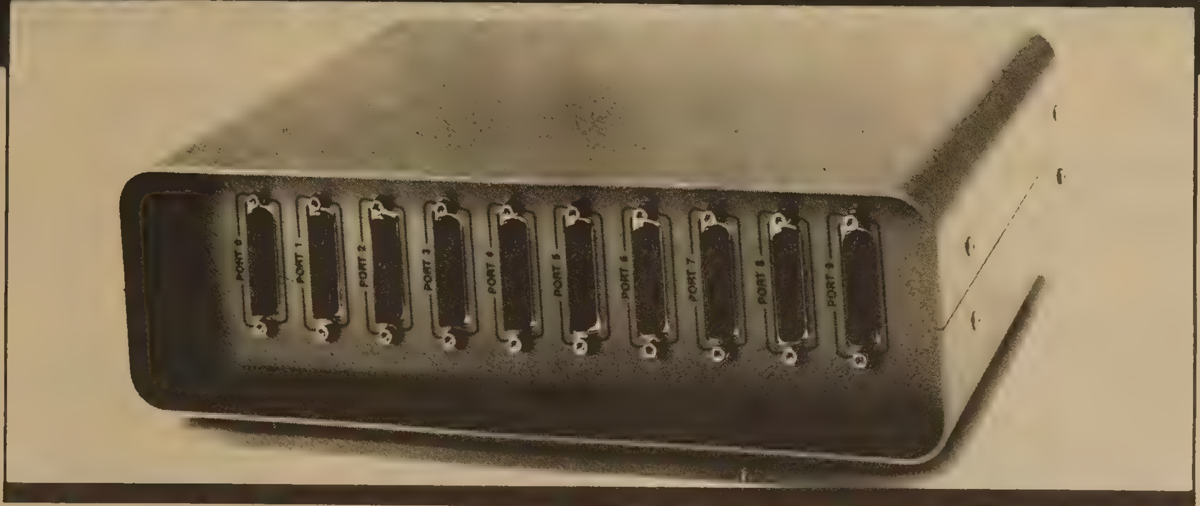

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MicroPsy. Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

C Group of Northern California. Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

BADGE-Bay Area Developers Group. Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

California Genealogical Society Computer Interest Group. Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call Bill West (415) 235-6107 for information.

Hebrew Users Group., Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793. Newsletter: $7.50/4 issues ($15/institutions). Write: HUG, c/o Berkeley Hillel, 2736 Bancroft Way, Berkeley, CA 74704.

Gay/Lesbian PC Users Group. We meet on the second Sunday of each month. This is the group where we show our hardware and software and share our knowledge. All levels of users are welcome. Meeting place is the MCC San Francisco, 150 Eureka Street. For more info, contact Jim at P.O. Box 42429, San Francisco, CA 94101, (415) 334-9761.

ComputerRooters. ComputerRooters' purpose is to foster the science of genealogy through educational and research programs. Among other things we show how you can use your computer to further genealogical research. Our library of computer diskettes ranges from useful public utility programs to shareware genealogy programs and is constantly being expanded. Contact Maxine Roberts at P.O. Box 161693, Sacramento, CA 95816. BBS: (916) 685-8690 (Dynasty BBS). 300/1200/2400 baud, 8-N-1, 24 hours.

International Interactive Communications Society (IICS). San Francisco Bay Area Chapter meets the second Tuesday of each month. Meetings alternate between San Francisco and Mountain View. National Office: 2120 Steiner St. San Francisco, CA 94115. (415) 922-0214. San Francisco Bay Area Chapter: P.O. Box 1372, San Carlos, CA 94070. Hot Line: (415) 328-7318.

Bay Area Automated Mapping Assoc. (BAAMA). An association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur on odd numbered months at various locations throughout the great bay area. P.O. Box 1427, Mill Valley, CA 94942. Contact Jake Armstrong, 1195 Third Street, Room 125, Napa, CA 94558. (707) 253-4351.

NFL-FOOTBALL: Free Open Organization To Better All League Logistics. New power algorithm to develop. Open to all. A bulletin board to go on line on Sept. 13, 1987. Will improve your understanding of the finer points of football performance. Meet once a month to get things started. Join a team research group. Opportunity to brush up on your programming skills, amateur or professional. Call the Construction factory for more information. Or send SASE for full particulars. The Construction Factory, 115 Aspen Drive, Pacheco, CA 94553. (415) 685-9366 or (415) 432-4526.

tecNICA. tecNICA volunteers donate two or more weeks of their time to support Nicaragua with their computer, engineering or other skills. Contact David Greighton, 2727 College Avenue, Berkeley, CA 94705. (415) 848-0292.

AI-Expert System for Business (ESB). Meets 1st and 2nd Sunday in San Francisco. "Investigate real business PC expert system solutions. Determine market opportunities. Guest speakers, discussions and group research/projects. BBS access soon. Quarterly newsletter. Beginners and businesses welcome. Call George Polzer (415) 564-6664 for more information.

Professional Association of Secretarial/Word Processing Services (PASS). A non-profit organization of word processing owners (including home-based services). Dedicated to promoting and maintaining quality and professionalism within the trade. Also provides a network of contacts and a spirit of cooperation. Contact Nina Feldman at 655-4296.

USER GROUPS

APL

APLBUG (APL Bay Area Users' Group) has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are $15. Contact Curtis Jones, (408) 292-4060, for information.

AT&T

Bay Area AT&T PC6300 Users' Group. Demos, technical help and more. Meeting time and location varies. Contact Joe Mahoney (415) 586-8376 or Maurice Aranda, (415) 972-5436.

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

Coleco Adam Users Group. For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

South Bay ADAM Users' Group. Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

East Bay ADAM Group. Forming an ADAM users group in the East Bay area. Call Tom for more information — (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

AMIGA

First Amiga User Group. We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejooh, (415) 595-5452.

First Amiga User Group the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

Sacramento Amiga Computer Club (SACC). Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

Amiga East Bay Info Exchange (AEBIE). P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

AD-Amiga Developers Group. Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

AEBUG-Amiga East Bay User Group. The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley, 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

AUGment; the Amiga User's Group of Silicon Valley. Meets every second Friday, 7:30 pm, at Milpitas City Library, 40 North Milpitas Blvd., Milpitas. Video Production, C programming, and hardware SIGs. Contact Jim Thomas, P.O. Box 1863, Fremont, CA 94538-0186. (415) 651-1160. BBS: (415) 659-9169.

Amiga Addicts Anonymous. Meets the fourth Tuesday of each month, 7:30 pm, at 1331 Concord Ave., Concord (CCC Water District) CA. Q&A session begins at 7:00 pm. For more into, contact Jeff Chase, president, P.O. Box 4669, Walnut Creek, CA 94596. (415) 933-0217. BBS: (415) 283-5469.

AUM-Amiga Users of Marin. Meets the third Wednesday of each month, 7:30, at the College of Marin, Science Center, #190, Kentfield, CA. For more info, contact Bob Galvan, 119 Willow, Corte Madera, CA 94925. (415) 924-5384.

Stockton - Modesto Amiga Users Group (SMAUG). Meets last Wednesday of each month at 3525 Benjamin Holt Drive, Central Lounge, Willow Glen Apts., Stockton, 7:30pm. For information call Rainer Kummerle. (209) 957-8620.

ASCITEC: The Amiga Science and Technology Users Group. Meets second Thursday, 5:00-7:00 pm, at Lockheed in Sunnyvale, B/147, Room 4-C. Scientific/Video Applications. P.O. Box 201, Los Altos, CA 94023. (408) 742-9110.

San Francisco Commodore User Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstrations, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Northern California Amiga Club. Meets 2nd Saturday of the month at 2:00 pm. Contact David L. Murphy at (916) 472-3237 for meeting place or write P.O. Box 54, Bella Vista, CA 96008.

APPLE

San Francisco Apple Core Special Interest Groups, BBS, large public domain software library, newsletter, help network. For meeting and current events information, call (415) 771-5830. Recorded message 24 hours, live person sometimes during business hours. Leave name and address to receive information. Draconet BBS (415) 781-6645 modem line.

The AppleWorks Users Group. c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

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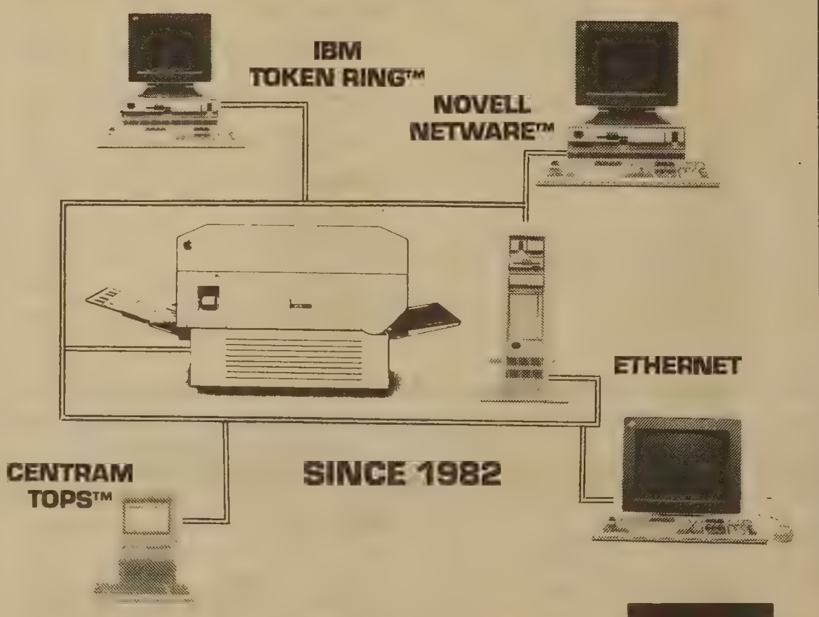

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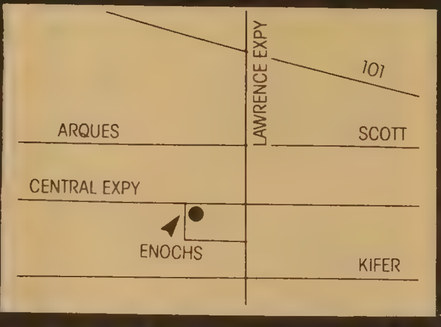

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Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

San Leandro Apple Eaters Users Group. Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

Pen-Apple (Peninsula Apple Users Group) Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

Diablo Valley Apple Users. Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

Roseville Apple Core. Discover your Apple's Core! We meet on the second Wednesday and fourth Tuesday of each month, 7:00, at SMUD Foothills Bldg., Training Room D, at Don Julio and Elkhorn. There are additional SIG meetings for AppleWorks, BASIC, Telcom and Macintosh. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just $12 yearly membership. C'mon out and bring a friend. For more info, contact Bruce McLeod, president, P.O. Box 1377, Roseville, CA 94551. (916) 723-6422.

Apple Sac. (Sacramento) Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave. 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

Stanislaus Apple Group. You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

Santa Cruz Apple User's Group meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

Apple Gardens. New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

Apple P.I.E. Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

ATUNC-Apple Three Users of Northern California. Explanations, demos, large public domain library. Mailing address: P.O. Box 1528, Mill Valley, CA 94942. On Apex and Draconet BBSs.

Apple East Bay Users. Meets the first Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

Apple Pickers of Sonoma County. Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

TVAUG-Tri Valley Apple II User's Group. Meets on the first Thursday of each month, 6:30 at 7079 Commerce Circle, Pleasanton, near the intersection of Hwys. 580 and 680, to discuss our Apple IIs. A special Appleworks group meets on the second Thursday of each month. For more info, contact Dan Balsley or Esther Farnstrom, 9814 Davona Drive, San Ramon, CA 94583. (415) 828-6237 or (415) 829-3672.

Apple Blossom User Group. Meets 1st and 3rd Wednesday of each month at 7 pm at 290 International Circle, San Jose CA 95119. All Apple users welcome. Apple II, II+, IIc, IIe, III and Macintosh. No matter which Apple you have we have a group for you. Contact Ray Enochs, P.O. Box 53323, San Jose CA 95153. (408) 723-9141. ABUG BBS (408) 227-3993.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

East Bay dBASE Users Group. Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

dBase II/III SIG of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

DBDVLPRS (dBaseIII Program Developers). Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month at 19th Ave. Diner, 19th and Lincoln Avenues, S.F. Call for times. Contact Bill Zinn at 753-8483.

A.C.M.E. (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N: San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Meets the first Thrusday of the month

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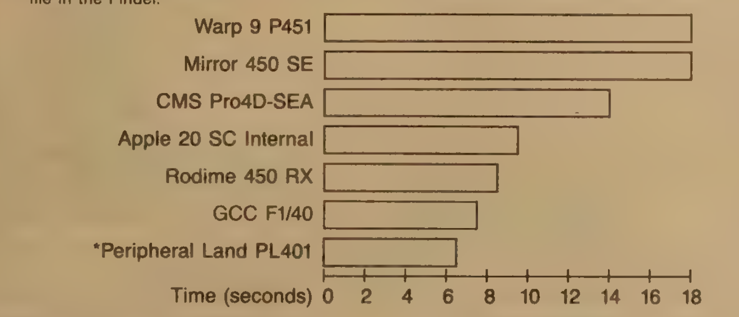

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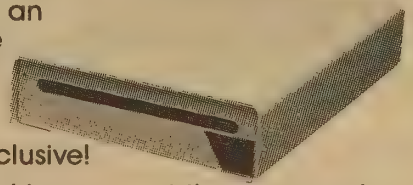

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at 7:00pm at the Contra Costa Water District Building conference room in Concord. Meetings free. $20 yearly membership comes with newsletter, discounts, raffle tickets. For information contact Mike at (415) 798-6565.

Bay Area Atari Users Group We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

COAST User Group (California Original Atari ST). Public domain disks, MIDI, support, newsletter, help for the Atari ST line of computers. Advice and programs not to miss. Meetings on the 3rd Wednesday of each month, at The Berkeley Conference Center, 2105 Bancroft in Berkeley, CA, 7:00 pm, 6:30 for beginners. $1.00 admission for non-members. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues $30.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

Redwood Atari Group (R.A.G.) Meets 4th Saturday, 1-4 pm, at Coddingtown Meeting Room, 1100-B Coddingtown Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

E.S.C.A.P.E. (Enthusiastic Santa Cruz Atari Programmers Exchange). Full software and hardware support of both the ST and 8-bit computers. For information call Chris Smart at (408) 335-4384.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

First Attache User Group News. Support, news, and cooperation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, Ca 94117, (415) 221-3415.

AUTOCAD

AutoCAD Users Group. Call Gen Katz (415) 530-8870 for information about future meetings.

AutoCAD User Group. Call Volker Ackermann, (415) 331-9466 for information.

AutoCAD Users Group of Santa Cruz. Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

BONDWELL

Bondwell Users Unite! Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

BPI

Bay Area BPI Users Group meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

CANNON

Cannon AS 100. Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville, CA 95688.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

CCS DESIGNER

CCS Designer CAD User Group. CCS Designer user group forming. All those interested call (415) 692-7250.

COMMODORE

San Francisco Commodore Users Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstration, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 686-4049 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

The Commodore Connection User Group. (CCUG) Meetings at Homestead Savings, 14th and "A" St., Antioch, 3rd Monday of the month, 7:30 pm. Contact Walt Moxely, 2229 Santa Maria Drive, Pittsburg, CA 94565. (415) 458-3318. BBS: (415) 458-1005, Commodore only, 24 hours, 300/1200.

Commodore User's Group of Hayward. For information write P.O. Box 2072, San Leandro, CA 94577.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

Santa Rosa Commodore Users Group. Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

Family Roots Searchers. Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Silicon Valley Commodore Computer Club. Meets 4th Wednesdays, H.P., 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

C.O.W. Commodore Owners Workshop. Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

Fairfield Commodore User Group. Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

FUNHUG — Fremont, Union City, Newark, Hayward Users Group. A user organized, user operated, user group not affiliated with any computer or software manufacturer or distributor. We have a Commodore and an IBM section in our group. Group meets every third Wednesday at 7:30 at 5445 Central Ave., Suite 4, Newark.

64/MORE, San Jose Chapter. Meets the first Sunday of each month from 6 pm to 9 pm at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, North Valley Chapter. Meets the second Saturday of each month from 10 am to noon at the Milpitas Public Library, 40 Milpitas Boulevard, Milpitas. For information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Cupertino Chapter. Meets the third Saturday of each month from 3 pm to 6 pm at the Saratoga Public Library, 13650 Saratoga Avenue, Saratoga. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Campbell Chapter. Meets the fourth Tuesday of each month from 6:30 pm to 9:30 pm at the Santa Clara County Public Health Building, 2220 Moorpark Avenue, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

CO-OP: Commodore Owners of the Peninsula. Meets third Saturday of the month, 1:00-4:00 pm, at the Foster City Recreation Center, Room 103, 650 Shell Blvd., (corner of E. Hillsdale Blvd.), Foster City, CA 94404. Membership $25/year. Non-members, $2/meeting. Contact P.O. Box 280495, San Francisco, CA 94128. (415) 595-8770.

CLIPPER

Bay Area Clipper User Group. The newly formed BACUG is the only user group in Northern California affiliated with Nantucket, developers of Clipper. It will operate as a SIG of the San Francisco PC Users Group. All persons interested are invited to attend the meetings. Entry is free to BACUG members; guests will be charged $5. For meeting times and locations contact Mike Pelladino at (415) 751-2719.

COMPAQ

SF Compaq Users Group is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

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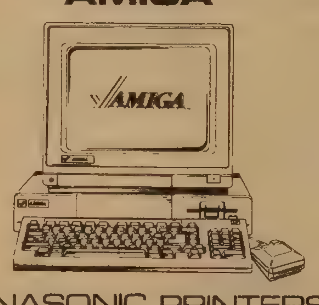

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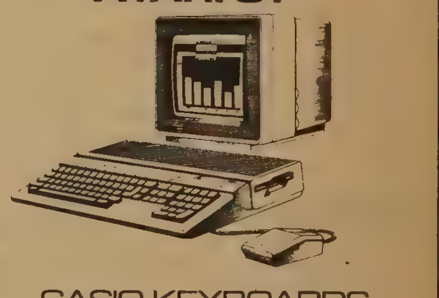

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COMPUPRO

Berkeley Compupro. Berkeley Compupro User Group meets 4th Thursday every other month. Company Reps attend meetings. For more information call Barry at (415) 665-4733.

Hayward Compupro Users Group. Meets 3rd Saturday of every month in Hayward, California. Sponsored by Automation Sciences International. Meetings held at 22532 Foothill Blvd., Hayward, between 'B' and 'A' Streets. You may call (voice) (415) 886-2980 or (modem) (415) 886-4734. The CP/M Connection for further information." Topics include: hardware & software problem identification and solution, upgrades, new products, CP/M, CCP/M, ZCPR and getting the most out of application software. Other users and interested parties are welcome. Group founder: Michael D. Lipshutz.

COMPUTER ASSOCIATES

Computer Associates Users Group of Northern California. Meets third Wednesday of every other month, 6:00-7:30 pm, at the Slovenian Hall, 2101 Mariposa Street, San Francisco. For local Computer Associates Software users looking for extended support. Sponsored by J.C. Lukrich & Co. Contact Beth E. Markus (415) 864-6770.

DATAFLEX

Dataflex User Group. For more information call Alex at (415) 433-7944.

DEC

Silicon Valley DEC PC Users Group. Meets 2nd Wednesdays 7–9 pm at Kierulff Systems 1180 Murphy Avenue, San Jose. Contact Gary Catalano (408) 275-1133.

DYNABYTE

Dynabyte Announcing M.A.D., Mutual Assistance, Dynabyters (Dinosaurians?) For owners of this orphan Z80 S100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

EAGLE

Eagle Computer Users Group. P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Tandem Computer H.R. Training Room at 10300 N. Tantau Ave., Cupertino, from 9:30 am to 12:00 noon.

Screaming Eagles User Group For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

Eagle Computer Users Group —ECUG. Meets 2nd Mondays, 7 pm, 6132—66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426).

EPSON

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan User Group. Meets 2nd Thursday, 7 pm, Lockheed Bldg 162. Sunnyvale, CA. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

HEWLETT-PACKARD

Bay CHHU, HP Laptop & Handhelds. Meets 2nd Saturday of the month. Contact Jim Horn (707) 523-4890 or Michael Felsenstein (415) 564-8279.

INTEREX is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

IBM

South County PC Users Group Meetings held second Thursday of each month at St. Clements School Library, 730 Calhoun St., Hayward. Public Domain and shareware disks, newsletter. Contact Bob McCloud (415) 537-9899.

Silicon Valley Computer Society. New users SIG, 7:30 pm, 2nd Wednesday at Hewlett-Packard Co., Bldg. 50, 5301 Stevens Creek Blvd.; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

The Bay Area Computer Society Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

IBM PC Users Group of the Redwoods. Meets on the second Thursday of the month, 7:00 pm, at Santa Rosa Veterans Memorial Bldg. Anyone interested in PCs and/or compatibles is welcome. Contact Michael Adams, P.O. Box 1009, Rohnert Park, CA 94928. (707) 664-8320. BBS (707) 546-4938.

Sacramento PC Users Group. Over 1000 members. Meetings at Holiday Inn Holidome, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

SF PC jr User Group meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

San Francisco PC Users Group. Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

Monterey Bay PCjr Users Group. Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

Valley PC Users Group. Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

FUNHUG PC—Fremont, Union City, Newark, Hayward User Group. For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at the Fremont Main Library, 39770 Paseo Padre, Fremont, CA at 7:30 pm. We have software/hardware demonstrations and visits from manufacturers. Our library contains over 350 disks of public domain software. There are no dues, beginners are always welcome. For more info and map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

Marin-Sonoma PC Users Group. Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

Santa Cruz Computer Society. Meets on the third Thursday of the month, 7:00 pm, at Center 2000, 2nd floor of the Palomar Hotel, 1344 Pacific Ave., Santa Cruz. For beginning to advanced users and programmers. Demos, reviews, solutions and classes on commercial, shareware and public domain programs. Spe-

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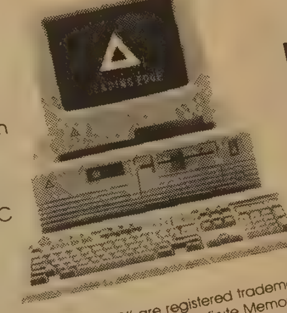

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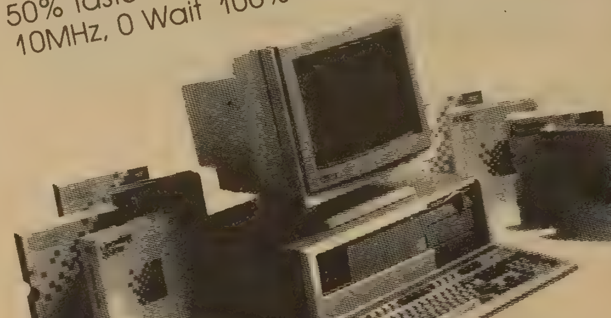

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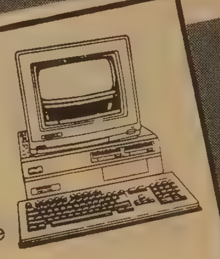

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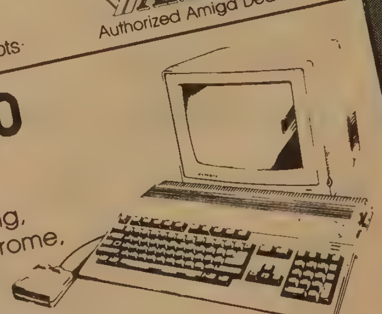

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San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

IBM Compatible User Group of Silicon Valley. Meets monthly to share information about IBM compatible or clone computers. BBS (408)287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

Berkeley P.C. Users Group. Meets on the 2nd Monday of each month, 7:00 pm, at 2618 Telegraph Avenue, Berkeley. For more info, contact Mel Mann, 1145 Walnut Street, Berkeley, CA 94707, (415) 527-2177 or Andy Wong, 2618 Telegraph Ave., Berkeley, CA (415) 845-4814.

IBM AT/XT Clone Users Group. Meets second Monday of every month, 7:00-9:00 pm, at Bldg. 'E', room 287, Fort Mason Center in San Francisco. $25 annual membership includes newsletter. Group focuses on clone hardware and support. Contact Philip James, P.O. Box 15000/324, San Francisco, CA 94115. Voice: 861-9321. BBS: (415) 552-9070.

Mid-Peninsula IBM PC Club. For IBM employees only. Contact George Halle (415) 855-3474 or Scott Maiden (415) 855-4509.

SACTO PCjr Group. Meets on the 4th Tuesday of each month at SMUD Bldg., 59th and Folsom Blvd., Sacramento, at 7:15pm.

CADVANTAGE - Cadvance Users Group. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/22/87, 10/21/87, 1/20/88, 7:00pm to 10:00pm. PC CADD for architectural/facility designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

BAYPUG-Bay Area P-CAD Users Group. Meets P-CAD 1290 Parkmoor, San Jose. 7/30/87, 10/29/87, 1/28/88, 9:00am to 1:00pm. PC CADD for PCB/CAE Designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

The Blacksmiths-ANVIL 1000 MD Users. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/15/87, 10/14/87, 1/13/88, 7:00pm to 10:00pm. PC CADD for Mechanical Drafting and Engineering designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

Stanford/Palo Alto PC Users Group. Meets last Wednesday of the month at 8:00 pm, Polya Hall, Turing Auditorium (Room 111), Stanford.

The IBM & Compatibles User Group (ICUG). A mail based group which has a monthly newsletter. Not for PCjrs. Large public domain software library, with great bargains. Members communicate through newsletter. $5.00/yr. fee. It's Worth It! Contact Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

Monterey Bay User Group IBM-PC (MBUG). Meets third Thursday of the month, 7:00 pm, at Seaside Library, 550 Harcourt Ave., Seaside, CA. Also Special Interest Groups meet every Wednesday, 7:00 pm, at 542 Archer St., Monterey, CA. A writer's SIG meets on the fourth Thursday of the month, 7:00 pm, at the Monterey Public Library, 625 Pacific St., Monterey. We have a large shareware library, annual auction and Christmas party. Contact Fred Brownell at (408) 373-6345.

KAYFUN: Peninsula Computer Club. Meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Supporting the MS-DOS & CP/M communities. Bimonthly newsletter, large CP/M and MS-DOS public domain libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

East Bay Users Group (EBUG). IBM, compatibles and clones. Meets 3rd Wednesday of the month (except August) at Merritt College Staff Lounge (R-7) Computer Lab, Merritt College, 12500 Campus Drive, Oakland 94619. Call (415) 436-2453 for more information.

KAYPRO

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:15 pm, at 846 Masonic, Albany, CA. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join. Contact Woody McPheeters. P.O. Box 20181, Oakland, CA 94620. (415) 548-3126. BBS: (415) 849-9389.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Bimonthly newsletter, large CP/M and MS-DOS public domain software libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group—informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

LEADING EDGE

Ventura County Leading Edge User Group. Meets 2nd Saturday of the month, 10:00 am, at Camerillo Library, 3100 Ponderosa Drive, Camarillo, CA. Contact Walt Yates at (805) 983-2199 for information.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler at P.O. Box 7816, Berkeley, CA 94707-0816.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings, one in conjunction with San Francisco Apple Core, and one in Concord. For meeting and current events information call (415) 771-5830. Recorded message 24-hours, live person sometimes during business hours. Leave name and address to receive information.

Berkeley Macintosh User Group (BMUG). 1442A Walnut St., #62, Berkeley, CA 94709. General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall on UCB campus. SIG meetings on Mondays, Tuesdays and Wednesdays. Call for more info and this week's topic. (415) 849-9114. BBS (415) 849-BMUG.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh Users Group (SMUG) meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUK for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

Club Mac of Monterey. Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter $25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

Macs Of Marin. Macintosh users of Marin County. Both beginning and experienced users are welcome. Meetings: Room 104, Austin Science Building, College of Marin, 2nd Thursday of each month, 7:00 pm. Contact Steve Salzman, (415) 459-5707.

maCruzers, a Macintosh user's group, meets every second Wednesday of the month at Louden Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker [sforaker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megs of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

Association of Apple 32 Users. Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.

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BAMMSBUA: (San Francisco) Bay Area Mac M.S. Basic Users Anonymous. A high-level users group devoted to the Microsoft dialect of BASIC for the Macintosh. Meets the second Tuesday of each month. For more information contact Ted Jones (415) 826-9239.

Mac Health User Group. For DentalMac, Medimac and Chiromac users, and interested others. To discuss ways to better use these billing and accounts receivable programs and the Macintosh in health-care practice. Meets at various times and locations. For more info, contact Robin Guess, 896 24th Avenue, San Francisco, CA 94121, (415) 387-3042.

Hellmans Open House. Meets every Tuesday 7 pm at 814 "E" St. San Rafael. Macintosh Network Games, Mazeware and Net-Trek, Bring your Mac and Appletalk cables if you have them. For more info call (415) 453-7924.

Christian Macintosh Users Group, Silicon Valley Chapter. Meets first Thursday of each month in Santa Clara. Newsletter and support hotline available All user levels welcome. Call Rick Thrasher at (408) 437-1913.

MICROMATE

East Bay Micro-Mate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MICROPRO

Wordstar Users. Forming user group for Wordstar users. Please write to P.O. Box 1331, Menlo Park, CA 94025 or call (415) 325-4277.

MIDI

MIDI Applications Group. Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

SMUG (Stanford Morrow Users Group). Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

PETMUG — Petaluma Morrow Users Group. Meets Westamerica Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

NEC

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

NOVELL

Novell User Group of Silicon Valley. A Novell user group forming. All those interested contact Robert J. Harrigan Jr. at 38 Corning Ave., Milpitas, CA 35035. (408) 263-0987.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter-First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

North Bay First Osborne Group. Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

PAPERBACK SOFTWARE

V-P Planner Special Interest Group. Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

PEACHTREE

Peachtree User Group. Peachtree users group forming. All those interested write for info. P.O. Box 20607, Oakland, CA 94620. Or call (415) 465-3570.

PICK

Northern California Pick Users. NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

PROLOG

Prolog. A SIG-Prolog is being formed. Interested? Call Jorge (415) 969-5045 or Dave (415) 368-8450 (evenings).

TPRO Users. A group formed for users of Turbo Prolog. Contact Kim Floyd, 3109 Scotts Valley Dr., Suite 138, Scotts Valley, CA 95066. (408) 867-3438 x27. BBS: (408) 438-6506.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

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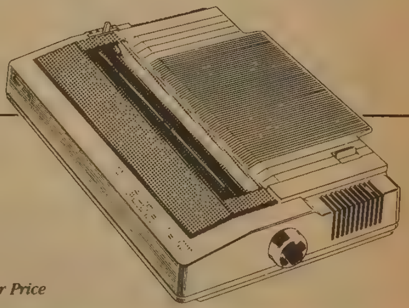

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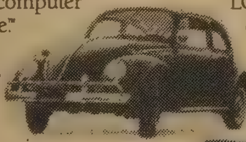

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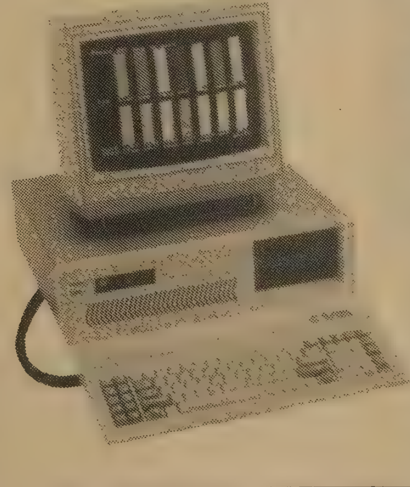

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40961 Grimmer Blvd., Fremont, CA 94538 (across from Tri-City Sports) **(415) 490-0685** this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybblers. All Tandy computers including MS-DOS (IBM Compatibles). SIG's include laptops, CoCo's, Mod 1,3,4, Mod 2, 12, 16, 6000 and MS-DOS, Access to a variety of Public Domain software. Education modules, "problem solving" peripheral committee. Meets at Chabot College (Rooms 600 & 1564) 2nd Friday, 8 pm. Write TRS-Nybblers, Chabot College, 25555 Hesperian Blvd., Hayward, CA 94545. Att'n Mel Edwards. Call B.B. Jarvis (415) 846-3575.

Bay Area Chapter of the California Computer Federation, a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

South Bay TRS 80 Users Group (SBUG). Meets on the second Tuesday of the month, 7:15 pm, Saratoga Library. Contact Chris Oman, P.O. Box 60116, Sunnyvale, CA 94088. (408) 985-9460. BBS: (408) 249-8259.

San Mateo TRS-80 Users Group. Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF., 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

Byte Bandits of America. Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200. 24 hrs., free, (408) 374-3974.

Club 100. A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

United Computer Federation: San Francisco Chapter. Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

Sacramento COCO Club. Meets 3rd Saturday of the month, 7:00 pm, at the Four Seasons Restaurant. 65th and Folsom Blvd. Contact Bill Drennon at (916) 486-1594 or write P.O. Box 214733, Sacto, CA 95821-0733.

REALWORLD

Bay Area REALWORLD Users Group meets the third Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

ROYAL

Royal Alphatronic, San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

S-100

S-100 Bus Users Group. Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

SANYO

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

SOUTHERN PACIFIC

ICOLATUG. User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

TEXAS INSTRUMENTS

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South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriques Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

Santa Clara Valley TI Pro User Group. Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

THEOS/OASIS

Theos/Oasis Users Bay Area Group. Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Usually meets 4th Thursday of the month at 7:30 pm, CALL FIRST FOR EXACT TIME AND PLACE. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3128 King St., Berkeley, CA 94703.

Timex/Sinclair Users of Silicon Valley (GUTS/SV) c/o Bill Miller, 6675 Clifford Drive, Cupertino, CA 95014-4530. 253-3175. SW library and newsletter. Meets every Saturday morning at 9:00 am at Stanford University, Jordan Hall (in the quadrangle), Math Building (number 380) in room 380C (downstairs). For topic check the PDSE (Public Domain Software Exchange) BBS in Sunnyvale at (408) 735-7390, 300/1200, 8-N-1, 24-hours, 32 lines (no waiting!).

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

Silicon Valley Net. Meets every fourth Tuesday of the month, 7:30 pm, at 3000 Hanover, Palo Alto. SVNet presents speakers on topics of interest to UNIX users. Informal, technical setting where questions are welcome. Free of charge.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor User Group. San Francisco Bay Area Victor User's Group. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact John Kimber at (415) 797-6423 or Bordman Moore at (415) 283-3285. Modem (415) 574-7914.

VTC-1050

VTC-1050 User's Group. Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353:

WORD PERFECT

Word Perfect of Santa Cruz. Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

Word Perfect SF PC UG. Meets on the first Monday of each month at 6:30 before general meeting at Fort Mason, Bldg. A, Rm. 5. Contact D. Wayne Smith at (415) 221-9166.

South Bay Word Perfect User Group. Call Martin Van Derpool, (408)238-8434 for information.

ZENITH

Zenith User Group of San Francisco. Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm second Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

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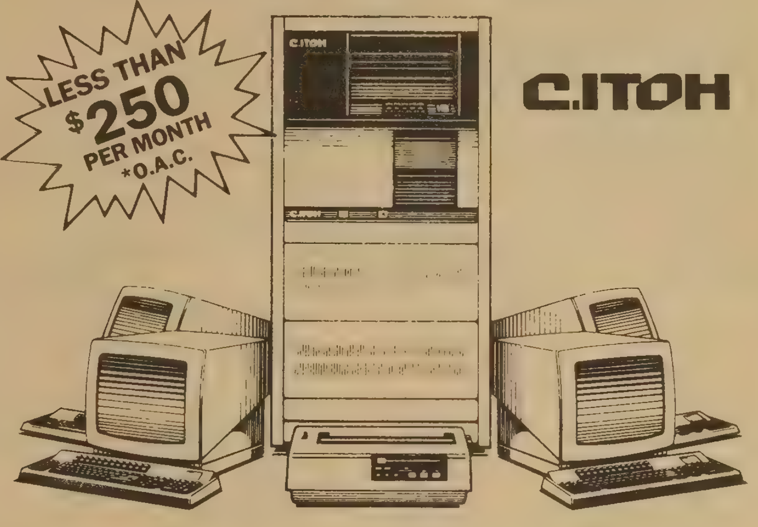

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A Tale Of Woe

By John C. Dvorak

I hated to admit it. But that's what I had to do when I recently gave a short talk to the GE PC co-ordinators at a meeting in Tampa Bay a couple of months ago. I must now admit that the Mac has been accepted by the business community. It's a trend. It will ruin the Mac, Mac software development, and, eventually, the Mac community itself. Apple asked for it. In fact, Apple begged for this to happen. Apple will live to regret it.

Background. It's happening everywhere. The market for the IBM PC has flattened and its growth stymied by some fear factor. Latecomers who are simply too afraid to learn a few DOS commands have to be hand-held to such a degree that the smart money in large corporations has switched to the Mac. Who needs to babysit a computerphobe? So, enter the Mac. "Here. Look! Point and click. Point and click. See how easy it is? Now read this book and leave me alone. Central services will come in to hook it to the network." General Electric now pushes the Mac as the machine of choice for the corporate worker. It's just the beginning.

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At first glance this tactic appears to be laughable. We all know that the Mac at its best is complex and buggy. Right? Wrong. The joke is on us. This new crowd sees the world differently. Old-time Mac users better get used to the new order of things.

This crowd, for example, will watch a screen dimmer go berserk and ruin a spreadsheet because of some bug. These new users immediately think it was their fault — some wrongly pushed button. In short, these users seem plumb stupid (at least by our old standards). Perhaps ridiculously naive is a more accurate description.

While many readers will say "so what?" to this, I suggest that this throng presents an immediate threat to the future of the Macintosh.

For starters, this group, whether dumb or naive, is surely dull. They are corporate computer users who have a machine because they have to. At first they will only use it to do spreadsheets at budget time. A few will learn to play a game or two, and maybe one or two might figure out a mailing list program or phone dialer. The most used programs will be in their own image — dull.

Note that this is no small group of duds we're talking about. This is a horde. A horde that the greedy software vendors will cater to once they discover that this corporate pack is mightily different from the old guard. First of all — they buy software! Here's a new concept. Until recently, Mac users never bought software. They simply copied it for the good of the community. This forced software vendors to keep producing better and better products under the mistaken impression that it was their fault if sales dropped dead after three months when, coincidentally, the bootleg pipeline filled to capacity.

Now they can rake in the dough. So forget about innovation. Besides that, the corporate grey-suited dullard doesn't want anything too fancy. Heaven forbid the machine talks or makes too much noise. They might get in trouble from their supervisor, don't you know.

To make the new scene more complex we add another new variable — the serious female user. "That will loosen things up!" say the pundits. Many people have always felt that the Mac was a feminine machine and that it naturally appealed to females. When one examines the percentage of women who subscribe to, say *MacUser* or *Macworld* to the number of women who subscribe to *PC* magazine, one finds the percentage of females is higher in the Mac category. For example, in the world of the PC, we can expect that a maximum of 10% of the readers are female. In the world of the Mac it's 15 – 20% and growing. Needless to say this difference hardly makes the Mac a "girl's computer." Nonetheless, there is a difference, and if women are flocking anywhere they are flocking to the Mac.

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Unfortunately, these newcomers are the serious, the somber and the sullen. These are not the women in the California Cooler ads or the backup singers to Spuds McKenzie. Always in a business suit, they never joke around or have much fun (although they all claim to have been incredible cut-ups "back when I was in school"). They continually experiment with their hair with the deep seated sentiment and belief that it would look better in a bun. In fact, these corporate women are worse than the men (or better, depending on your feminist perspective) when it comes to being dull, boring and serious.

When you combine the new abundance of dull women with their dull men counterparts, it's like the Night of The Living Dead — relentless zombies who can't take a joke. Their motto: "I don't get it."

Are these the kind of people we want to welcome into the community? Heck no. But what can we do? Apple encouraged them to join in the fun. The fun part will soon be verboten.

Now I look back at old columns and see that my old theories are kaput. The Mac won't be the yuppie status symbol as I predicted. The true yuppie has a fast IBM PC-AT that he or she never uses. Besides that, the stock market plummet put them on the skids for good. I also thought that the Mac was to be the class act machine for today's top executive. Too many low level clerks use them nowadays, says the executive.

The real tragedy, though, is that the rosy Macintosh world of creativity will soon be a memory — a vision destroyed — usurped by the stolid, the boresome and the lovers of the mundane. The future is here. Rejoice. Rejoice. And have a good stiff drink. ☐

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